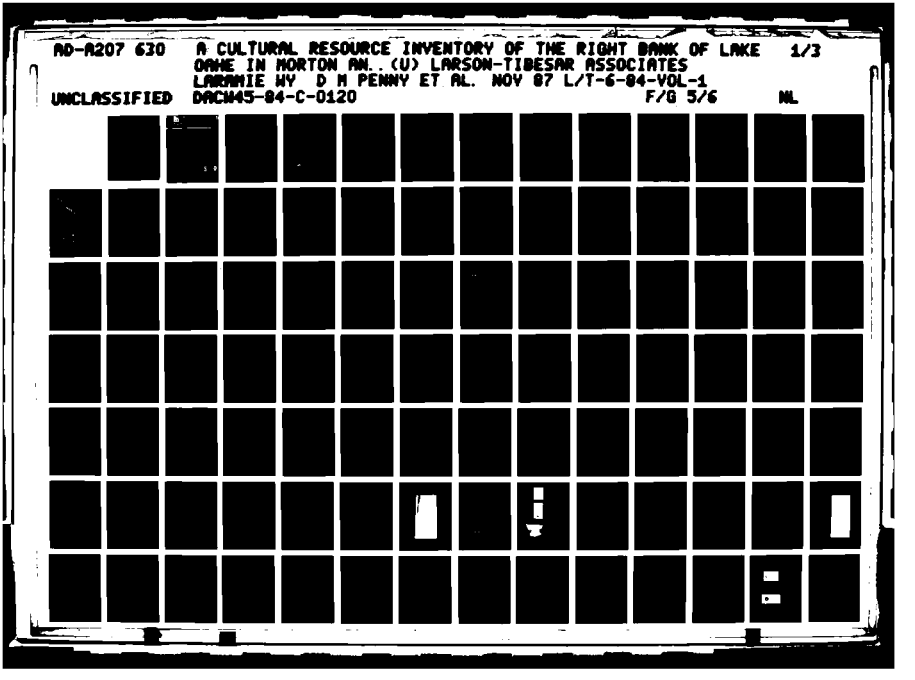
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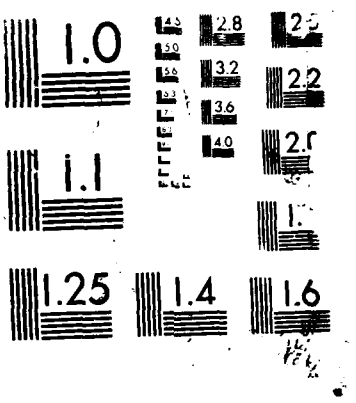
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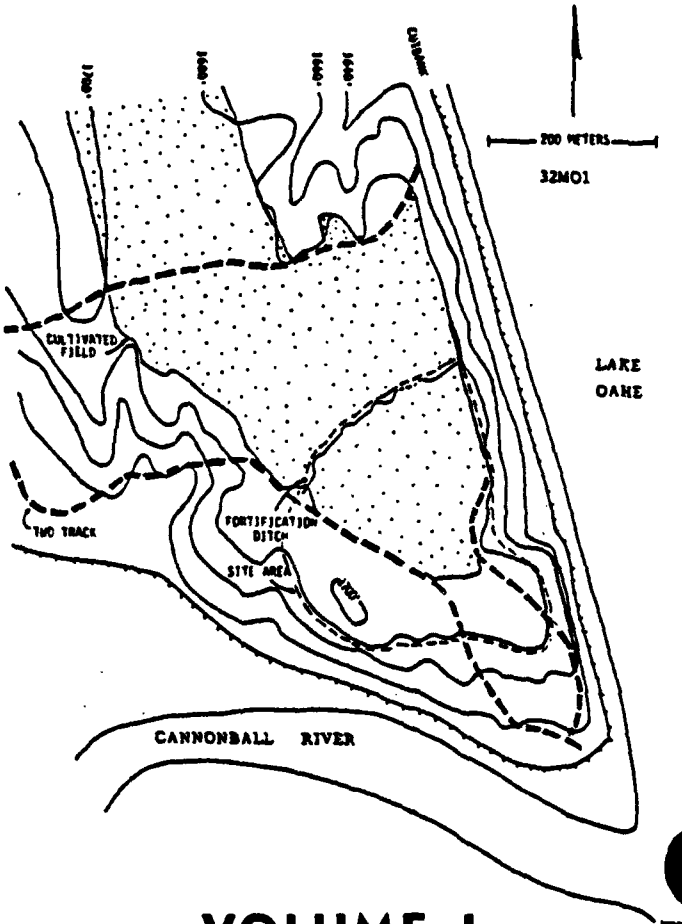
A CULTURAL RESOURCE INVENTORY OF THE RIGHT BANK OF LAKE OAHE IN MORTON AND SIOUX COUNTIES, NORTH DAKOTA



VOLUME I

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20.

An intensive cultural resource inventory was conducted on approximately 13,200 acres (5280 hectares) of federal land along the right bank of Lake Oahe within Morton and Sioux counties, North Dakota. As a result of this inventory, 57 sites and 20 isolated finds were recorded. Eight of these sites are believed to be eligible for nomination to the National Register of Historic Places. The site patterning analysis demonstrated that location of prehistoric cultural resources are predictable to a fairly high degree (approximately 75 percent). It is suggested that the mathematical model developed from this analysis may be of use for developing management strategies and for research.

A CULTURAL RESOURCE INVENTORY OF THE RIGHT BANK OF LAKE OAHE, IN MORTON AND SIOUX COUNTIES, NORTH DAKOTA.

by
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CHAPTER ONE
INTRODUCTION

Thomas K. Larson and Dori M. Penny

Project Description

During the summer of 1984, Larson-Tibesar Associates of Laramie, Wyoming, conducted a cultural resource inventory of approximately 13,200 acres (5280 hectares) of federal land along the right (west) bank of Lake Oahe within Morton and Sioux counties, North Dakota. The area inventoried extends from just south of Mandan, North Dakota to the North Dakota-South Dakota state line. This work was conducted for the United States Army, Omaha District Corps of Engineers (Contract #DACW45-84-C-0120).

Crew members for the 1984 Lake Oahe project included Thomas Larson (principal investigator), Keith Dueholm, Ross Hilman and Dori Penny. Historic sites and isolated finds were also inspected by Kurt Schweigert, and James Dahlberg of Cultural Research and Management, Bismarck, North Dakota. The archeological field inventory was begun on June 18 and completed on July 13, 1984.

Detailed maps which show all of the areas inventoried and the cultural properties recorded are presented in Appendix A within Volume II of this report. The contract called for a 100 percent inventory of approximately 46 percent of the study area (6100 acres; 244 hectares). In the northern portions, where approximately 7100 acres of periodically flooded bottom lands are present only a 25 percent sample inventory was requested (see Figure 1.1 and "Sampled Areas," below). Table 1.1 is a listing of the legal locations, down to the section level, of all areas subjected to a 100 percent inventory. Unless some of the section has been previously inventoried for proposed recreation areas (Larson et al. 1983), it can be assumed that all upper terrace areas (i.e., those areas not subjected to a 25 percent sampling) controlled by the Omaha District Corps of Engineers were inventoried.

In addition to the main body of the this report, Volume II of the report contains five appendices which supply more detailed information on the inventory and its findings. As already stated, Appendix A is a set of maps showing the boundaries of the area inventoried and the locations of the cultural resources recorded. Appendix B is a summary of the results of the documents searches conducted prior to the initiation of the field inventory. Appendix C is a tabular listing of management data related to each locality recorded. Appendix D lists and briefly describes all cultural materials collected during the 1984 inventory. Appendix E is a tabular listing of the environmental data utilized for the analysis discussed in Chapter 7.

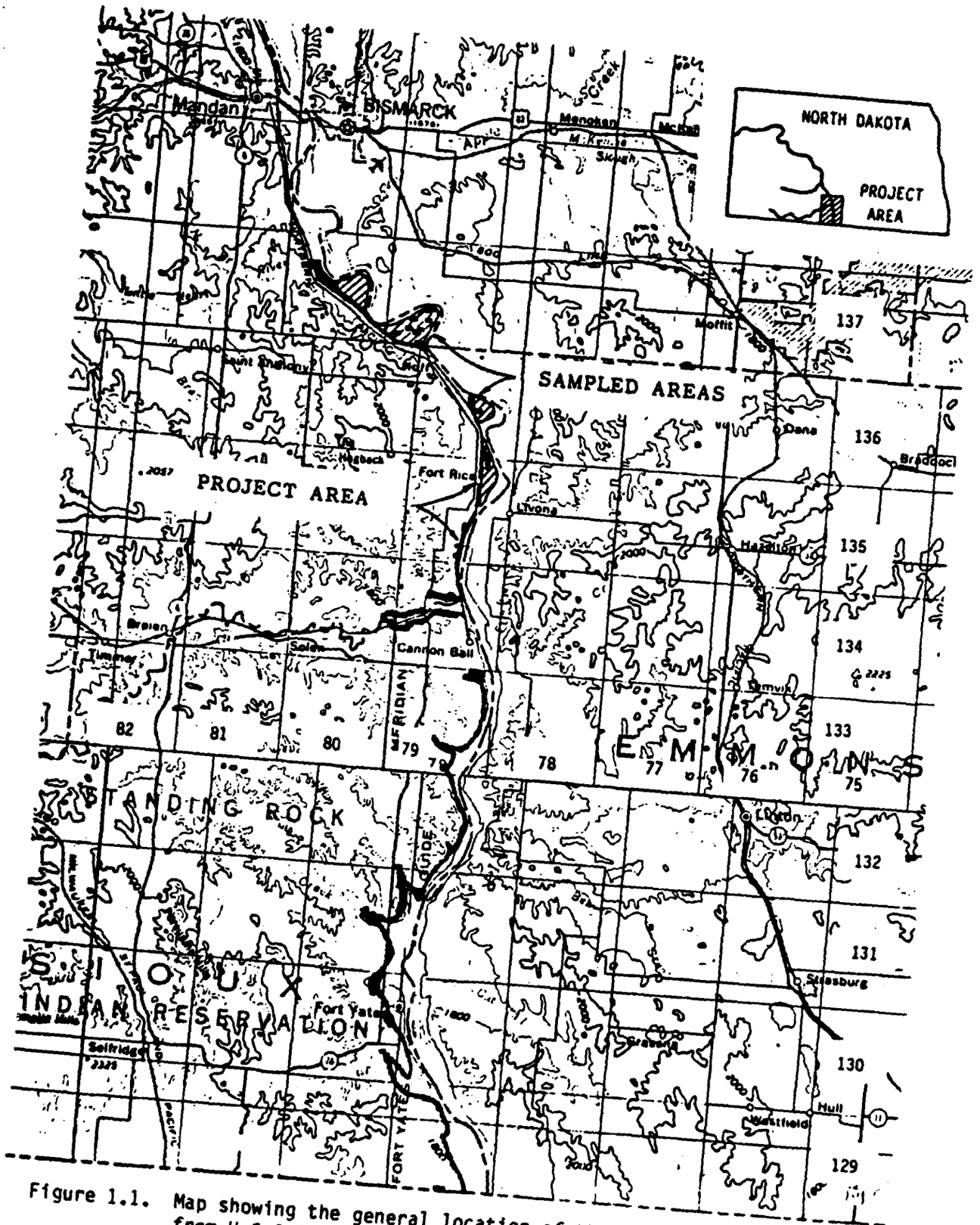

Figure 1.1. Map showing the general location of the project area. Adapted from U.S.G.S., State of North Dakota map; scale = 1:500,000.

Table 1.1. List of sections, portions of which were subjected to 100 percent inventory during the 1984 Lake Oahe survey.

TOWNSHIP	RANGE	SECTION	COUNTY	TOPOGRAPHIC MAP
137 NORTH	79 WEST	31	MORTON	SUGARLOAF BUTTE
137 NORTH	80 WEST	8	MORTON	SCHMIDT
137 NORTH	80 WEST	15	MORTON	SCHMIDT
137 NORTH	80 WEST	16	MORTON	SCHMIDT
137 NORTH	80 WEST	17	MORTON	SCHMIDT
137 NORTH	80 WEST	22	MORTON	SCHMIDT
137 NORTH	80 WEST	23	MORTON	SCHMIDT/SUGARLOAF BUTTE
137 NORTH	80 WEST	25	MORTON	SUGARLOAF BUTTE
137 NORTH	80 WEST	26	MORTON	SCHMIDT/SUGARLOAF BUTTE
137 NORTH	80 WEST	27	MORTON	SCHMIDT
137 NORTH	80 WEST	36	MORTON	SUGARLOAF BUTTE
135 NORTH	79 WEST	15	MORTON	FORT RICE
135 NORTH	79 WEST	21	MORTON	CANNON BALL
135 NORTH	79 WEST	22	MORTON	CANNON BALL
135 NORTH	79 WEST	23	MORTON	CANNON BALL
135 NORTH	79 WEST	27	MORTON	CANNON BALL
135 NORTH	79 WEST	33	MORTON	CANNON BALL
135 NORTH	79 WEST	34	MORTON	CANNON BALL
134 NORTH	79 WEST	3	MORTON	CANNON BALL
134 NORTH	79 WEST	9	MORTON	CANNON BALL/CANNON BALL NW
134 NORTH	79 WEST	10	MORTON	CANNON BALL
134 NORTH	79 WEST	15	MORTON & SIOUX	CANNON BALL
134 NORTH	79 WEST	16	MORTON & SIOUX	CANNON BALL/CANNON BALL NW
134 NORTH	79 WEST	17	SIOUX	CANNON BALL NW
134 NORTH	79 WEST	19	MORTON & SIOUX	CANNON BALL NW
134 NORTH	79 WEST	20	MORTON & SIOUX	CANNON BALL NW
134 NORTH	79 WEST	21	SIOUX	CANNON BALL NW
134 NORTH	79 WEST	22	SIOUX	CANNON BALL
134 NORTH	79 WEST	30	SIOUX	CANNON BALL NW
134 NORTH	80 WEST	24	MORTON & SIOUX	CANNON BALL NW
134 NORTH	80 WEST	25	MORTON & SIOUX	CANNON BALL NW
133 NORTH	79 WEST	2	SIOUX	CANNON BALL SE
133 NORTH	79 WEST	3	SIOUX	CANNON BALL SE
133 NORTH	79 WEST	11	SIOUX	CANNON BALL SE
133 NORTH	79 WEST	12	SIOUX	CANNON BALL SE
133 NORTH	79 WEST	13	SIOUX	CANNON BALL SE
133 NORTH	79 WEST	21	SIOUX	CANNON BALL SE
133 NORTH	79 WEST	23	SIOUX	CANNON BALL SE
133 NORTH	79 WEST	24	SIOUX	CANNON BALL SE
133 NORTH	79 WEST	26	SIOUX	CANNON BALL SE
133 NORTH	79 WEST	27	SIOUX	CANNON BALL SE
133 NORTH	79 WEST	28	SIOUX	CANNON BALL SE
133 NORTH	79 WEST	34	SIOUX	CANNON BALL SE
133 NORTH	79 WEST	35	SIOUX	CANNON BALL SE
132 NORTH	79 WEST	5	SIOUX	CANNON BALL SE
132 NORTH	79 WEST	8	SIOUX	CANNON BALL SE
132 NORTH	79 WEST	9	SIOUX	CANNON BALL SE
132 NORTH	79 WEST	16	SIOUX	CANNON BALL SE,'FORT YATES NE
132 NORTH	79 WEST	21	SIOUX	FORT YATES NE
132 NORTH	79 WEST	28	SIOUX	FORT YATES NE

Table 1.1 (continued). List of sections, portions of which were subjected to 100 percent inventory during the 1984 Lake Oahe survey.

TOWNSHIP	RANGE	SECTION	COUNTY	TOPOGRAPHIC MAP
132 NORTH	79 WEST	29	SIOUX	FORT YATES NE
132 NORTH	79 WEST	32	SIOUX	FORT YATES NE
132 NORTH	79 WEST	33	SIOUX	FORT YATES NE
132 NORTH	80 WEST	35	SIOUX	FORT YATES NW
132 NORTH	80 WEST	36	SIOUX	FORT YATES NW
131 NORTH	79 WEST	5	SIOUX	FORT YATES NE
131 NORTH	79 WEST	6	SIOUX	FORT YATES NE
131 NORTH	79 WEST	7	SIOUX	FORT YATES NE/FORT YATES NW
131 NORTH	79 WEST	8	SIOUX	FORT YATES NE
131 NORTH	80 WEST	1	SIOUX	FORT YATES NW
131 NORTH	80 WEST	9	SIOUX	FORT YATES NW
131 NORTH	80 WEST	11	SIOUX	FORT YATES NW
131 NORTH	80 WEST	12	SIOUX	FORT YATES NW
131 NORTH	80 WEST	13	SIOUX	FORT YATES NW
131 NORTH	80 WEST	14	SIOUX	FORT YATES NW
131 NORTH	80 WEST	15	SIOUX	FORT YATES NW
131 NORTH	80 WEST	16	SIOUX	FORT YATES NW
131 NORTH	80 WEST	22	SIOUX	FORT YATES NW
131 NORTH	80 WEST	23	SIOUX	FORT YATES NW
131 NORTH	80 WEST	24	SIOUX	FORT YATES NW
131 NORTH	80 WEST	25	SIOUX	FORT YATES NW
131 NORTH	80 WEST	26	SIOUX	FORT YATES NW
131 NORTH	80 WEST	35	SIOUX	FORT YATES NW/FORT YATES
131 NORTH	80 WEST	36	SIOUX	FORT YATES NW
130 NORTH	79 WEST	19	SIOUX	FORT YATES/FORT YATES SE
130 NORTH	79 WEST	30	SIOUX	FORT YATES SE
130 NORTH	79 WEST	31	SIOUX	FORT YATES/FORT YATES SE
130 NORTH	80 WEST	2	SIOUX	FORT YATES
130 NORTH	80 WEST	3	SIOUX	FORT YATES
130 NORTH	80 WEST	10	SIOUX	FORT YATES
130 NORTH	80 WEST	11	SIOUX	FORT YATES
130 NORTH	80 WEST	13	SIOUX	FORT YATES
130 NORTH	80 WEST	14	SIOUX	FORT YATES
130 NORTH	80 WEST	24	SIOUX	FORT YATES
130 NORTH	80 WEST	25	SIOUX	FORT YATES
130 NORTH	80 WEST	26	SIOUX	FORT YATES
130 NORTH	80 WEST	36	SIOUX	FORT YATES
129 NORTH	79 WEST	6	SIOUX	FORT YATES/FORT YATES SE
129 NORTH	79 WEST	8	SIOUX	FORT YATES SE
129 NORTH	79 WEST	9	SIOUX	FORT YATES SE
129 NORTH	79 WEST	10	SIOUX	FORT YATES SE
129 NORTH	79 WEST	15	SIOUX	FORT YATES SE/MAHTO NE
129 NORTH	79 WEST	16	SIOUX	MAHTO NE
129 NORTH	79 WEST	21	SIOUX	MAHTO NE
129 NORTH	79 WEST	22	SIOUX	MAHTO NE
129 NORTH	79 WEST	26	SIOUX	MAHTO NE
129 NORTH	79 WEST	27	SIOUX	MAHTO NE
129 NORTH	79 WEST	34	SIOUX	MAHTO NE
129 NORTH	79 WEST	35	SIOUX	MAHTO NE
129 NORTH	80 WEST	1	SIOUX	FORT YATES

Finally, Volume III and Volume IV of the report contain copies of all site and isolated find forms completed for this project. Those readers interested in obtaining copies of Volumes II through IV, which have limited distribution, should contact the staff archeologists at the Omaha District Corps of Engineers for further information.

In addition to the information contained in Volumes I, II, III, and IV, the Corps of Engineers has also been supplied with aerial photos, land plat maps, and boating and recreation maps, all showing both the the areas inventoried and the cultural properties recorded. Copies of the site forms for this project and all artifacts collected have been delivered to the State Historical Society of North Dakota, North Dakota Heritage Center, Bismarck, North Dakota.

The work performed under DACW45-84-C-0120 is intended to provide compliance with all, or pertinent segments of, the following list of federal and state documents:

1. Antiquities Act of 1906, 43CFR Part 3.
2. The Reservoir Salvage Act of 1960.
3. The National Historic Preservation Act of 1966, as amended, and implementing regulations 36CFR Part 800.
4. National Environmental Policy Act of 1969.
5. Executive Order 11593.
6. Historic and Archeological Preservation Act of 1974, an amendment to the Reservoir Salvage Act of 1960.
7. The American Indian Religious Freedom Act.
8. Archaeological Resources Protection Act of 1979, 36CFR Part 1215.
9. North Dakota Guidelines for Cultural Resource Inventory Projects.

Sampled Areas

As already noted the contract called for only a 25 percent sample of certain areas of bottom land in the northern end of the survey area. This bottom land is approximately 7100 acres (2840 hectares) in size, thus 1775 acres of it were inventoried. A combined use of judgmental and stratified random sampling was utilized for these areas. Table 1.2 describes the areas from which the sample was drawn and lists the specific areas within them which were inventoried.

While the vast majority of the area outlined for 25 percent sampling is bottom land, there are small areas of upper terrace comprising approximately 225 acres. These areas were subjected to a 100 percent inventory due to the number of known sites along this upper terrace. Although considered part of the 25 percent sample, these 225 acres are incorporated as part of the listing in Table 1.1 and counted as part of the 6100 acres of upper terrace survey. The acreages are therefore not

Table 1.2. Areas Sampled. Lower case letters within parentheses indicate the individual quadrats.

Schmidt Bottom*

Location: All noninundated federal land on the right bank of the Missouri River, south of the Little Heart River, and below the 1630 foot contour line in sections 14, 15, 16, 22 and 23, T. 137 N., R. 80 W. (Morton County).

Inventory Areas: (a) portions of the W½ of the SW¼ of the NW¼ Section 14 and the NE¼ of the SE¼ of the SW¼ of the NW¼, the E½ of the NE¼ of the SW¼ of the NE¼, the S½ of the NE¼ of the NE¼, and the SE¼ of the NE¼ Section 15; (b) the S½ of the SW¼ Section 15; (c) portions of the E½ of the NE¼ of the SW¼, the N½ of the SE¼, the S½ of the SE¼ of the SE¼ of the NW¼, the S½ of the SW¼ of the NE¼, and the S½ of the SE¼ of the NE¼ Section 15; (d) the SE¼ of the SE¼ Section 15 and the NE¼ of the NE¼ Section 23. An additional 2.5 miles of roads, equating to 30 acres, were also inventoried (see Appendix A). Total area inventoried = 350 acres.

Graner Bottom

Location: All noninundated federal land on the right bank of the Missouri River below the 1630 foot contour line in sections 20, 21, 28, 29, 30, 31, 32 and 33, T. 137 N., R. 79 W. and sections 25 and 36, T. 137 N., R. 80 W. (Morton County).

Inventory Areas: (a) the SE¼ of the NW¼ and the SW¼ of the NE¼ Section 21; (b) the NE¼ of the NW¼ and the NW¼ of the NE¼ Section 28; (c) the N½ of the NW¼ Section 29; (d) the N½ of the SE¼ Section 29; (e) the NW¼ of the SW¼ Section 29 and the NE¼ of the SE¼ Section 30; (f) the SW¼ of the SW¼ Section 29 and the SE¼ of the SE¼ Section 30; (g) the S½ of the SW¼ Section 30; (h) the SE¼ of the NE¼ Section 31 and the SW¼ of the NW¼ Section 32; (i) S½ of the SE¼ Section 32. An additional 6.6 miles of road, equating to 80 acres, were also inventoried (see Appendix A). Total area inventoried = 800 acres.

Unnamed Bottom

Location: All noninundated federal land on the right bank of the Missouri River below the 1620 foot contour line in sections 9, 14, 15, 16, 22 and 23, T. 136 N., R. 79 W. (Morton County).

Inventory Areas: (a) the SW¼ of the NW¼ and the NW¼ of the SW¼ Section 15; (b) the SE¼ of the SW¼ and the SW¼ of the SE¼ Section 15. Total area inventoried = 160 acres.

Fort Rice Bottom

Location: All noninundated federal land on the right bank of the Missouri River below the 1620 foot contour line in sections 26 and 35, T. 136 N., R. 79 W. and sections 1, 2, 11 and 12, T. 135 N., R 79 W. (Morton County).

Inventoried Areas: (a) the SE¼ of the NW¼ and the NE¼ of the SW¼ Section 35; (b) the SE¼ of the SW¼ and the SW¼ of the SE¼ Section 35; (c) the W½ of the NE¼ Section 2. Total area inventoried = 240 acres.

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* The sections in Schmidt Bottom are extremely irregular in shape and thus not amenable to description using the ¼/¼/¼ system used in this table. See Appendix A for the exact position of the areas inventoried.

repeated as part of Table 1.2. An additional 110 acres of judgmental sample were used to investigate road cuts where buried cultural materials may have become exposed and visible.

The remainder of the sample was carried out as a stratified random sample using 80 acre, rectangular quadrats (one-quarter by one-half mile) as the sample units. Stratification was on the basis of the remaining four areas of bottom land - Schmidt Bottom, the Graner Bottom, and the unnamed bottom between Graner and Fort Rice, and Fort Rice Bottom. All four of these areas were inventoried at the same relative intensity. This resulted in the surveying of four quadrats in Schmidt Bottom, nine quadrats in the Graner Bottom, two quadrats in the unnamed bottom and three quadrats in Fort Rice Bottom for a total of 1440 acres (576 hectares) of stratified random sample.

Documents Search

The two most critical goals in the initial stages of the documents search were to ascertain the number of previously recorded sites in the project area and, as closely as possible, the location of each of these cultural resources. The first step was to compare the descriptions and legal locations as they are provided in the original documentation on the site (e.g., Smithsonian Institution, River Basin Survey site forms; Will and Hecker 1944; etc.) and compare these materials against written and graphic syntheses (e.g., Cooper 1953; Jensen 1965; Adamczyk 1975; Corps of Engineers and Smithsonian Institution map files; etc.). Such preliminary research has been found to be very useful in resolving problems such as misplaced site locations, duplicated site numbers and incorrect descriptions of site type.

Data sources consulted for prehistoric sites include both published and unpublished materials as well as informant data. Key published materials were Will and Hecker (1944), Lehmer (1971) and reports of the Smithsonian Institution, particularly the Bureau of American Ethnology's River Basin Survey Papers. Unpublished reports, manuscripts, notes and maps were compiled from the Omaha District, Corps of Engineers Office, the National Park Service, Midwest Archeological Center in Lincoln, Nebraska, and the State Historical Society of North Dakota, Bismarck. A key informant concerning known site locations was Mr. Ralph Thompson, of Bismarck, a highly knowledgeable amateur very familiar with the upper Lake Oahe area.

Prior to commencement of the field inventory a list of possible historic period sites within the vicinity of study area was generated by Kurt P. Schweigert, Project Historian, Cultural Research and Management. These data were then supplied to the archeological survey team. The list of potential and known historic sites, which is contained as part of Appendix B to this report, was generated from available survey plats, atlases of Morton and Sioux counties, and the site files of the State Historical Society of North Dakota. Other historical collections and materials about Morton and Sioux counties were also consulted in the collections of the State Historical Society. Information about pre-patent entries and locations of early homesteads, ranches, trails, post offices, and ferries was sought in General Land Office Plats and notes of surveyors which are maintained by the North Dakota State Water Commission in Bismarck.

The prehistoric and preliminary historic documents searches were followed by the construction of a map file which pinpointed, as closely as possible, the locations of previously recorded cultural resources. The maps, together with copies of all previously recorded site forms, published material and manuscripts were then taken into the field in an effort to relocate these resources.

Appendix B lists all cultural resources indicated to exist within any segment of the sections crossed by the 1984 survey. Many of the properties listed are outside of the actual inventory area. The appendix contains 351 entries. Of these, 88 are believed to be inundated by the waters of Lake Oahe. Another 147 are not inundated but are believed to be outside of the area inventoried. Four of the site locations are incorrect or so vague as to be of little value. Two cemeteries were moved prior to the flooding of Lake Oahe.

Sites 32MO54, 32MO60 and 32MO61 are listed as a single entry in Appendix B because their site areas overlap (Meier 1983:926). These sites are believed to have been destroyed by construction of the Northern Border Pipeline (Gnabasik and Drybred 1983:1364; Meier 1983; see also, discussion below under "Previous Cultural Resource Work in the Area").

Of the remaining 109 entries, 55 were not found. Many of these are probably inundated or outside the survey area but there is no way of telling this from the documents examined. The remaining 54 entries are believed to be related to 25 newly recorded or previously recorded sites which were found within the project area:

32MO1	32SI5
32MO16	32SI13
32MO19	32SI16
32MO20	32SI30
32MO114	32SI38
32MO118	32SI39
32MO120	32SI40
32MO123	32SI42
32MO126	32SI46
32MO127	32SI52
32MO131	32SI53
32MO132	32SI56
	32SI101

These 25 sites are discussed in Chapter Six. The data gathered to generate Appendix B originates from sources of greatly varying quality and detail. Because of this fact, multiple entries for the same site (sometimes at differing locations) are not uncommon.

Previous Cultural Resource Work in the Area

A great deal of previous historic and archeological work has been conducted by both amateurs and professionals in and near the study area. Most of these studies are discussed by Wood (1983) in a previous summary of the upper Lake Oahe area. A number of the investigations believed to be most important to the present study are listed below, in roughly chronological order. Only those studies and projects which contain mention of

sites between Bismarck and the North Dakota-South Dakota state line have been included in the following discussion.

1880s-1890s - T.H. Lewis conducts an archeological survey over much of the Northern Plains. Much of Lewis' interest was in burial mound complexes. Among the sites he inspected were a series of mounds in Morton County. The locations given (Lewis 1890; Signe Snortland-Coles, State Historical Society of North Dakota, personal communication) indicate that these mounds are probably part of the Schmidt Mound site (32MO20)

1896 - J.V. Brower of the Minnesota Historical Society gathers prehistoric artifacts in the vicinity of Bismarck believed to be ancestral to the Mandan (Brower 1904).

1904-1905 - George F. Will and Herbert J. Spinden gather data on prehistoric "Mandan" culture, particularly from excavations of the Double Ditch site near Bismarck (Will and Spinden 1906).

1907 - Ernst R. Steinbrueck compiles two regional maps showing the locations of many of the earthlodge villages along the Missouri River in North Dakota (Wood 1978). This is probably the first map showing the location of the Schmidt Mounds (32MO20).

1908 - A.B. Stout and Ernst R. Steinbrueck make a detailed map of the Shermer site (32EM10) for the State Historical Society of North Dakota (see Sperry 1968:5).

1911 - George F. Will and Herbert J. Spinden compile information on sites along the Missouri River in North Dakota and South Dakota (Will 1924).

1930s-1940s - Thad Hecker, with the State Historical Society of North Dakota, excavates and tests a number of sites along the Missouri River and compiles a listing of the known village sites in the region. This monograph was subsequently published under the authorship of Will and Hecker (1944). As Wood (1983:99) notes this publication "also contained the first taxonomy of village sites in the area: Archaic Mandan (principally now including Extended Middle Missouri variant sites); Middle Mandan (which includes the Huff phase of the Terminal variant of the Middle Missouri); Later Heart River (basically the present Post-Contact Coalescent Heart River phase sites); Decadent (including many of the post-1780 village sites of the Coalescent tradition); and Cheyenne and Arikara Villages (Will and Hecker 1944)."

1929-1931 - Alfred W. Bowers conducts field work which ultimately results in a second proposed taxonomy (Bowers 1948) for archeological components along the Missouri River in North Dakota and South Dakota. Within the present study area, Bowers' groupings included "the Cannonball focus (roughly equivalent to the Fort Yates phase); the Huff focus (basically the Huff phase); and the Heart River focus (now the Heart River phase)" (Wood 1983:100).

1938 - William Duncan Strong excavates at On-a-Slant Village at the mouth of the Heart River. This material was analyzed by Carlyle S. Smith and became incorporated into Strong's (1940) synthesis of the archeology of the Northern Great Plains.

1946 - The Missouri River Basin Survey is organized to conduct archeological and paleontological investigations related to Federal watershed projects along the Missouri River. Although the River Basin Survey was formed as an arm of the Smithsonian Institution, Bureau of American Ethnology, data recovery was actually an inter-agency cooperative effort also involving the National Park Service, the Bureau of Reclamation, and the United States Army Corps of Engineers (Roberts 1953). Valuable cooperation was also provided by non-federal agencies and institutions. Primary among these within the study area were the State Historical Society of North Dakota and the University of North Dakota.

1947-1952 - River Basin Survey teams gather field information and complete the first forms on sites along the Missouri River in North Dakota (Cooper 1953; Jensen 1965). Key personnel involved in this effort include Paul L. Cooper, J.J. Bauxar, George Metcalf, R.C. Farrell and J.J. Hoffman. As part of the archeological survey work, in 1947, Gordon W. Hewes (1949), with the University of North Dakota, surveyed portions of Four Mile Creek south of Fort Yates. One of the goals of that survey was to locate one of several possible Cheyenne villages noted by Lewis and Clark, but none were found (Wood 1971). Four Mile Creek is within the 1984 project area.

1946-1969 - Testing and major salvage excavations take place at archeological sites which will be impacted by the waters of Lake Oahe. Within North Dakota, work was conducted at the Huff site (32MO11; Wood 1967), the Paul Brave site (32SI4; Wood and Woolworth 1964), the Robert Zahn site (32SI3; Wood and Woolworth 1964), the Battle-Porcupine Creek area sites (32SI6, 32SI7, 32SI8, 32SI76, and 32SI77; Scheans 1957), Boundary Mounds (32SI1; Wood 1960), the Tony Glas site (32EM3; Howard 1958), the Schmidt Mound site (32MO20; Neuman 1975), mound site 32MO207 (Neuman 1961), the Shermer site (32EM10; Sperry 1968), the Fire Heart Creek site (32SI2; Lehmer 1966), Alkire Mound (32SI200; Henning 1965), the Havens site (32EM1; Sperry 1982) and the Bendish site (32MO2; Thiessen 1976). Of the above mentioned sites, the Robert Zahn site, Boundary Mounds and the Schmidt Mound site are within the 1984 survey area. The Paul Brave site, the Battle - Porcupine Creek area sites and the Fire Heart Creek site are believed to be inundated. The Tony Glas site, the Shermer site and the Havens site are not in the survey area. Mound site 32MO207, the Alkire Mound and the Bendish site are adjacent to the project area.

1953 - Ray H. Mattison (1953) completes a monograph on the known historic sites in the vicinity of Oahe Reservoir.

1954 - Donald J. Lehmer (1954) presents the first version of his cultural chronology for the village peoples of the Northern Plains.

1961 - Waldo R. Wedel (1961) publishes a fairly detailed synthesis of the known prehistoric archeology of the Great Plains. Wedel's chapter on the Middle Missouri subarea contains a discussion of much of the excavation work completed along the river in the 1950s.

1971 - Lehmer's (1971) Middle Missouri Archeology is published. Although several changes have been proposed to cultural taxonomic scheme presented by Lehmer, this book remains the primary guide to the known prehistoric cultures of the Middle Missouri subarea.

1970s-1980s - The Army Corps of Engineers initiates in-house and contract funded cultural resource inventories of Lake Oahe.

1979 - The University of North Dakota conducts limited test excavations at On-a-Slant Village (32MO26; Ahler, Schneider and Lee 1981).

1980 - The University of North Dakota conducts inventory and site testing in the path of Northern Border Pipeline (Root and Gregg 1983a; 1983b). This pipeline passes through the 1984 Lake Oahe survey area and impacted sites 32MO54, 32MO60 and 32MO61 (Gnabasik and Drybred 1983; Meier 1983).

Adequacy of Previous Investigations

Many of the regional studies for the project area (e.g., Will and Spinden 1906, Will and Hecker 1944, Bowers 1948, and to a great extent, Lehmer 1971) deal almost exclusively with the Plains Village tradition. Pre-Plains Village are not mentioned at all, or only mentioned briefly.

In 1950, George Metcalf compiled Smithsonian Institution, River Basin Survey site forms on the known sites in the area of the then proposed Lake Oahe. Using today's terminology, this effort would be considered a Class I or Level I documents search. Apparently, no field checks were made at that time. Without exception, the previously known sites for the area were those previously reported by Will and Hecker (1944) and were, therefore, all Plains Village sites.

The survey work by Farrell and Hoffman in 1952 was more wide-ranging in interests than previous investigations. However, the scope of their survey was more restricted in that it was limited to land within or very near to the projected maximum projected pool level of the reservoir. New site types recorded during this stage of investigation included Woodland burial mounds and associated habitation areas, small "campsites," buried bone deposits and ceramic scatters (Cooper 1953).

Also during 1953, an appraisal of the historical resources along Oahe reservoir was issued (Mattison 1953). Historic sites mentioned in the Mattison report generally fall into three categories: military posts, townsites and the probable locations of Lewis and Clark campsites. All of the historic components recorded during the 1984 inventory had not been previously recorded. The increased density of historic sites is viewed more as a product of shifting research interests rather than an inadequacy of the original studies.

Locational information on previously recorded sites, while somewhat vague by today's standards, was found to be generally accurate. Originallly, the River Basin Survey site forms were often found to be quite sketchy and many information categories were left blank. It is quite apparent the major goals of the investigators were to 1) locate the sites; 2) determine if they would be damaged or destroyed by the reservoir and 3) if this was the case, to determine if they would be worthy of testing and/or salvage excavations.

Site information related to the resulting completed Northern Border Pipeline project (e.g., Root and Gregg 1983a) were found to be accurate, concise, and informative.

Field Inventory Techniques

The total project area was inventoried by four persons operating as two person crews. Two-person crews were used because it was found that many areas of federal land to be inventoried were too narrow to accommodate three-person crews spaced at 30 meters apart. The basic survey methodology employed by Larson-Tibesar Associates utilized a series of parallel survey transects with crew members spaced approximately 30 meters apart.

Cultural material observed during the inventory phase of the project was identified and recorded as either a site or an isolated find. The distinction between site and isolated find is based on the density of surface materials, potential for buried cultural materials and the presence of cultural features. A locality was always recorded as a site if cultural features or buried cultural deposits were present. An area was also recorded as a site if the density of surface materials reached a prescribed level; in most cases, all cultural items considered part of the same site had to be within thirty meters of one or more other items from the site. To summarize, a locality was recorded as a site if at least one feature was present or if at least two artifacts were found within 30 meters of one another.

Some exceptions were taken to this maximum spacing if it appeared that buried cultural deposits were likely present in between the items. Additionally, if artifacts were found farther than 30 meters away, but appeared to have been removed from main site area by erosional processes, then these were also recorded as part of the site. All other recorded cultural materials were described as isolated finds.

At prehistoric sites, the minimal documentation procedures were as follows:

1) Intensive examination of the area by the entire crew using "mini-transect" coverage (i.e., spacing of approximately one-two meters).

2) At all sites, the location of all cultural features, diagnostic artifacts and concentrations of artifactual materials were marked with pin flags.

3) Site boundaries, observed features and any collected cultural materials were mapped using a portable transit and stadia rod.

4) A datum marker, corresponding to the site mapping station, was left at each recorded site. Where possible, the location of this datum was tied into surrounding topographic features and Corps boundary markers.

5) All sites were photographed and appropriate State of North Dakota cultural site survey forms completed. The location of all sites was plotted on field maps and available aerial photos and transferred to clean copies for inclusion on site forms and on-going project area maps.

Collection of cultural materials was restricted to those items believed to be temporally or culturally diagnostic and whose collection would be useful to the overall goals of this project. All collected materials are stored at the State Historical Society of North Dakota. Their locations were mapped prior to collection to provide minimal loss of contextual information.

Artifact Analysis

As previously stated, only those items believed to be temporally or culturally diagnostic or useful to the overall goals of this project were collected. A list of those items collected is presented as Appendix D within Volume II of this report.

Observed but non-collected artifactual materials were analyzed in the field. Analysis of both collected and non-collected prehistoric artifacts is based on a set of standardized attributes. For lithics these included raw material type, artifact type, completeness and size grade. Raw material type was defined using regionally accepted terminologies (e.g. Schneider 1972; Clayton et al. 1970). Stage of decortication, a part of the completeness attribute, follows Schneider (1972).

Size grades are as follows:

Size Grade	
1	less than one-quarter inch (.635 cm)
2	greater than or equal to one-quarter inch but less than one-half inch (1.27 cm)
3	greater than or equal to one-half inch but less than one inch (2.54 cm)
4	greater than or equal to one inch but less than two inches (5.08 cm)
5	greater than or equal to two inches but less than three inches (7.62 cm)
6	greater than or equal to three inches

The widest dimension on the artifact determines the size grade.

Ceramic descriptions generally follow Sperry (1968), Sperry (1982), Ahler (1977), Wood (1967), Woolworth and Wood (1964) and Neuman (1975). Only rim sherds and body sherds containing distinctive decorative elements were collected. Uncollected body sherds were size graded in a manner similar to lithic debitage (see above).

Historic Field Methods, Description, and Evaluation Procedures

Field recording and initial recommendations for historic period cultural resources was carried out by Cultural Research & Management, Inc., under subcontract with Larson-Tibesar Associates. Field inspection of these resources were accomplished by Kurt P. Schweigert and James Dahlberg.

Field survey and recording activities of the historical team were directed to those localities and sites at which the archeological survey

team had discovered apparent historic period cultural remains. Field inspection of historic period resources on the right bank of Lake Oahe was conducted in October and November, 1984, when weather conditions and vegetation were ideal for field examination.

Field recording included creation of extensive tape-recorded notes describing the physical nature and setting of each site, the nature and location of artifacts, and the dimensions, composition and contents of structural features. A map was prepared to illustrate the locations and orientations of all site features. The map was prepared by means of pacing along compass bearings between features. All bearings were paced by Kurt Schweigert in order to maintain consistency in the relative measurements.

Recording of standing structures or remains of buildings included description of identifiable or probable dimensions, structural systems, roof shapes, principal materials and the nature of any foundation or basement, exterior wall treatments, fenestration and entries, and ornamentation. A plan sketch was drawn for each standing structure including the measured dimensions and a compass bearing for the main entrance or facade. Apparent alterations, additions, or erosions of original structures were verbally noted. Black and white print photographs were taken of each feature and concentrations of artifacts. Whenever possible, photographs were taken from opposing corners of buildings in order to represent all exterior elevations, roof slopes, and ornamental treatments.

Features other than standing structures were verbally described as to nature (depression, artifact concentration, etc.), dimensions including depth, and contents if any. Non-structural features were usually photographed from one angle, except when the feature could not be adequately represented in one photograph. Information recorded in written notes and photographs overlapped considerably with recorded field notes, to provide a back-up of field information should one or the other source of information be damaged or lost.

Following field survey, the recorded notes were transcribed onto magnetic computer disks in a site form format approved by the State Historic Preservation Office in North Dakota. Site sketch maps and building plan maps were transferred to the appropriate site forms, and photographs were attached to the site forms.

Histories of surface ownership of the recorded sites were developed through consultation of deed records in Morton and Sioux counties. Names of persons formerly associated with the sites were sought in the general biographical works about North Dakota, in historical publications about the two counties, and in records of the Historical Data Project which are included in the papers of the Works Progress Administration now maintained by the State Historical Society of North Dakota. Published works consulted include Hixson (1916), Hennessy (1910), Lounsberry (1917), Crawford (1931), Robinson (1966), and Bird and Taylor (1972).

Architectural evaluations of standing structures and remains of structures included categorization according to accepted architectural styles or periods, and determination of the relative values of the buildings in the architectural history of the region, state and nation. Evaluation of the relative rarity and/or representative values of the buildings was conducted

with reference to Historical Architectural Overview of Western North Dakota (Schweigert 1983a), which is the only available synthesis of rural architecture for the region. All sites were evaluated according to the following questions:

1) Does the site exhibit outstanding physical characteristics, such as architecture or site organization and construction?

2) Does the site exhibit a likelihood to contain artifactual or architectural remains which could significantly expand existing knowledge about historic human activities in the region? The field of historical archeological investigation of settlement sites is not yet well developed, and therefore there are few parameters or guidelines for determining the potential value or National Register eligibility of the archeological component of settlement sites. The general standards applied in this study were: the extent of the site; the apparent representation of dwelling and economic function areas such as barns, root cellars, workshops and corrals; and the nature, abundance and apparent temporal range of domestic and other artifacts on the site.

3) Does the site represent a site type particularly well? A site type might include such specific categories as a particular method of construction associated with an ethnic group, or broad categories such as initial homesteads of the region.

4) Does the site have possible historical significance apart from the physical nature of the site? Such significance might arise from association of the site with persons important in history, or from the occurrence of an important historical event at that location.

5) Does the site retain essential integrity in the features and areas which may have scientific/cultural or historical sociocultural importance?

CHAPTER TWO
ENVIRONMENTAL SETTING

Keith H. Dueholm and Dori M. Penny

Introduction

The 1984 project area consisted of the west bank of the Missouri River from a point south of Mandan, North Dakota to the South Dakota state line, excluding areas surveyed in 1982 (Larson et al. 1983). The area is characterized by long, narrow strips of uplands and, in the northern segment, portions of floodplain not inundated by the impoundment of Lake Oahe. While the lowlands are usually wooded and the uplands are primarily mixed-grass prairie, topography and other factors allow a wide variety of habitats to exist within or adjacent to, the project area. Although all areas inventoried are within land administered by the Corps of Engineers, it is desirable to characterize the habitats adjoining these lands as well. Thus, the following environmental description (especially concerning vegetation) often includes situations which may not have been encountered within the survey area itself but which are known, or could reasonably be expected, to occur in the vicinity of the study area.

The Missouri Valley is within the Great Plains physiographic province (Fenneman 1931). The segment of the valley within North Dakota and South Dakota is both physiographically and culturally distinct from areas up and down stream and has come to be referred to as the Middle Missouri subarea or region (Will and Spinden 1906; Wedel 1961).

Physiography, Geology and Paleoclimate

Within the study area, the Middle Missouri Valley forms a trench cut into the Missouri Plateau from three to seven kilometers wide and up to 100 meters deep. Prior to impoundment the river, particularly that stretch south of Bismarck, had a very rapid rate of meandering (Johnson et al. 1976). From the early 1880s to the early 1970s, the main channel is known to have moved laterally as much as 1.2 kilometers.

The Missouri Plateau is a northeastward sloping plain composed primarily of Early Cenozoic deposits. Downward cutting of the Missouri River has exposed interbedded clay, silt and sand of Tertiary age, and a Cretaceous shale bedrock (Moran et al. 1976:134-136).

Pre-late Wisconsinan glaciations deposited a great deal of till over the eastern portions to the Missouri Plateau. The last of these was the Napoleon Glaciation which probably did not advance beyond the present location of the Missouri River in the study area (Moran et al. 1976:149). Following the deposition of the Napolean drift there was a period of erosion and weathering during which the present valley bottoms were entrenched. Moran et al. (1976:150) considers this weathering episode to

During the late Wisconsinan, the Lostwood Glaciation covered areas to the north and east of the study area with final advances of ice starting approximately 22,000 years B.P. Near the end of the Lostwood Glaciation, meltwater flowed southward into the Missouri Valley depositing a gravel terrace approximately 10 meters above the present river level. These gravels were subsequently covered with a loess deposit. These deposits are referred to as Mallard Island and form the lowest member of what Clayton and Moran (1971) have named the Oahe formation.

From the end of glaciation to approximately 10,000 years B.P. there occurred a cool humid period during which time much of the area was covered by spruce-aspen woodland. These conditions resulted in the development of a fine-grained and brightly-colored soil which makes up the lower portion of the Aggie Brown Member of the Oahe formation (Moran et al. 1976:153). Between 10,000 and 8,500 years B.P., the climate warmed somewhat and the spruce-aspen woodland was replaced by grasslands. The resultant soils are the dark fine-grained portions of the upper Aggie Brown Member (Moran et al. 1976:153). The formation of the Aggie Brown Member is, chronologically, nearly analogous to the Paleoindian period of the cultural sequence for the Plains (e.g., Frison 1978 and Chapter 4 of this report).

Between 8,500 and 4,500 years B.P., there was a period of warmer and dryer climate than present. Within the Middle Missouri Valley, this time period is represented by the coarse-grained and light-colored Pick City Member of the Oahe formation (Moran et al. 1976:154). This age and climate corresponds to the Early Plains Archaic cultural period (Frison 1978).

The late Holocene is described by Moran et al. (1976:154) as the present climate interspersed with intervening dry periods. The resultant Riverdale Member of the Oahe formation is therefore characterized by dark submembers, representing the cooler periods, separated by coarser-grained and lighter-colored units which represent the dry periods.

Modern soils in the Missouri Valley of southern North Dakota are usually a dark grey-brown prairie top soil less than 20 centimeters thick. Hilltops and steeper slopes often have a stoney or gravel surface (Kazeck 1956:85). Soils within the project area in Morton County include those classified in the Morton, Hall, Cheyenne, Havre and Banks series (Edwards and Ableiter 1951). This list includes series present only in the bottomlands. No soil survey information is currently available for Sioux County. It should be noted that, within the project area, the trend is for increasing aridity with increasing downstream distance within the project area.

The Missouri River is the major water course draining western North Dakota. Prior to the numerous dams constructed along the Missouri, the river transported enormous amounts of sediment southward toward the Gulf of Mexico. The major tributary drainages within or near the study area are the Heart and Cannonball rivers:

> The Heart River has its source near Saddle Butte, in Billings County, which is a mere twelve miles from the main channel of the Little Missouri River....From these higher elevations, the Heart flows torturously eastward through Stark, Grant and Morton Counties, to join the Missouri just south of Mandan. Although

> this river has a drainage basin of only 3,000 square miles [7770 square kilometers], it carries a large volume of water each spring....
>
> The Cannonball River begins in the southern part of Billings County and, with its important tributary, Cedar Creek, drains some 6,000 square miles [15,540 square kilometers] just north of the South Dakota border. The Cannonball has a length of 520 miles [837 kilometers], with an average fall of three feet per mile [.6 meters per kilometer] [Kazeck 1956:124].

A number of authors (e.g., Lehmer 1971:53) have noted the differences in both physiography and subsistence patterns between the east and west sides of the Missouri River. Nearly all of the differences are attributable to the fact that areas west of the Missouri are well-drained plains with only a minimum of glacial till. On the other hand, areas to the east of the river are covered with glacial drift prairie and form a kettle topography characterized by nonintegrated sloughs and ponds.

Climate

The portion of the Missouri Valley in which the study area is located is within the Upper Sonoran life zone (Bailey 1926). This zone is characterized by a semiarid climate in which evaporation exceeds precipitation most of the year. Mean annual precipitation ranges from 38 to 43 centimeters a year, with the rate of precipitation generally decreasing the farther south one goes (Kazeck 1956:87,127).

This amount of precipitation would be insufficient for sustained agricultural development if it were not for the time of year it comes. As Wilkins and Wilkins (1977:16) point out:

> The only meteorological stations in the United States to record a lower annual precipitation than North Dakota's are those in the desert of the Southwest and the Great Basin area of the Far West. The single factor which enables North Dakota to survive is that 77 percent of the annual moisture comes during the growing season - a greater percentage than that received in the same period in any other state.

North Dakota is infamous for its temperature extremes. The July temperature mean for the study area is 21.7 degrees Centigrade, while the mean January temperature is -13.3 degrees Centigrade (Kazeck 1956:89; Jensen n.d.). Extremes for the state are a recorded low temperature of -51.1 degrees Centigrade and a high of 49.4 degrees Centigrade, both during 1936 (Kazeck 1956:89).

Vegetation

The vegetation along the portion of the Missouri River inventoried has been broadly characterized as the Great Plains Short-grass Prairie province (Bailey 1926), the Bouteloua gracilis province (Daubenmire 1978) or Mixed grass Prairie (Whitman and Wall 1975). The uplands support, in a broad

sense, wheatgrass-needle grass (Agropyron-Stipa) grassland (Kuchler 1975; Bailey 1980). Northern floodplain forest (Populus-Salix-Ulmus) occurs along the Missouri River (Kuchler 1975) and certain elements of Tall-grass Prairie (i.e., the Andropogon scoparius province of Daubenmire (1978)), extend west along moist slopes and bottomlands of the Missouri River Valley. Within this overall setting various factors, such as topography, aspect, soil texture and moisture, allow a variety of plant communities to exist within, or near, the project area. Nomenclature in the following descriptions of plant communities generally follows that of the Great Plains Flora Association (1977).

Level to rolling surfaces of the upper terraces generally support a Mixed-grass Prairie community, the most extensive vegetational type occurring within the state of North Dakota (Whitman and Wali 1975). Grasses or sedges are dominant components of this community, especially the mid-grasses needle-and-thread (Stipa comata), western wheatgrass (Agropyron smithii), green needlegrass (Stipa virdula), Sandberg's bluegrass (Poa sandbergii) and junegrass (Koeleria pyramidata and/or K. macrantha), beneath which are such short-grasses or sedges as blue gramma (Bouteloua gracilis), buffalo grass (Buchloe dactyloides, occasionally), threadleaf sedge (Carex filifolia) or sun sedge (C. heliophila).

Forb production in Mixed-grass Prairie is much less than grass production (Redmann 1975), yet a variety of species occur in this community (Hanson and Whitman 1938; Redmann 1975). some are evident only early in the growing season, such as biscuitroot (Lomatium orientale) and Plains wild onion (Allium textile), while others such as coneflower (Echinacea angustifolia) and purple prairie clover (Petalostemon purpureum) are more evident in mid to late summer. Other frequent forbs include globe mallow (Sphaeralcea coccinea), white sage (Artemisia ludoviciana), white heath aster (Aster ericoides), blazing star (Liatris punctata), golden aster (Chrysopsis villosa), locoweed (Oxytropis lambertii), silver scurfpea (Psoralea argophylla), prairie turnip (P. esculenta), butterflyweed (Gaura coccinea), milkwort (Polygala alba) and toadflax (Commandra umbellata). The subshrub fringed sage (Artemisia frigida) may also be prevalent.

Infrequent buttes capped by the Tongue River formation occur near the project area. The slopes of these are usually highly eroded clays or silts, supporting a sparse vegetation cover and giving them a badlands appearance. This vegetation includes such grasses as western wheatgrass, blue gramma, saltgrass (Distichlis spicata) and foxtail barley (Huordeum jubatum). Forbs such as saltbush or silverscale (Atriplex spp.) goosefoot (Chenopodium spp.), povertyweed (Monolepis nuttalliana), seablite (Suaeda depressa) and wild buckwheat (Eriogonum pauciflorum), and the shrubs longleaf sage (Artemisia longifolia) and rabbitbrush (Chrysothamnus nauseosus) occur on these eroded clay slopes and outwashes.

The western extensions of the Andropogon scoparius province of Daubenmire (1978) occurs on the steep slopes and drainage cuts of the upper terraces. This province often has a high proportion of Tall-grass Prairie species, as well as shorter members of the Mixed-grass Prairie. This Andropogon scoparius community contains such mid-grasses as needle-and-thread, side-oats gramma (Bouteloua curtipendula), and stonehills muhly (Muhlenbergia cuspidata) as well as such tall-grasses as little bluestem (Andropogon scoparius). Sandreed and sandhills bluestem (A. hallii) occurs

in sandy areas. On lower slopes, big bluestem (A. hallii) occurs in sandy areas. On lower slopes, big bluestem (A. gerardi) may reach heights in excess of 1.5 meters. Such forbs as stiff sunflower (Helianthus rigida), wild lettuce (Lactuca pulchella), alumroot (Heuchera richardsonii), prairie smoke (Geum triflorum), prairie turnip, prairie clovers (Petalostemon spp.), ground plum (Astragalus crassicarpus), gaillardia (Gaillardia aristata), coneflower (Echinacea angustifolia), prairie coneflower (Ratibida columnifera), stiff goldenrod (Solidago rigida) and many others are present. In situations where this community adjoins drainages or draws, bur oak (Quercus macrocarpa) may be present in various amounts, usually sparingly.

Many of the deep, narrow ephemeral stream drainages that cut through the bedrock terraces contain a Hardwood Draw community. This community also develops on the terrace slopes near the mouths of these drainages. It is often characterized by bur oak in open to relatively dense stands. Other deciduous trees which may be found in the community include green ash (Fraxinus pennsylvanica), box elder (Acer negundo) and American elm (Ulmus americana). Infrequent trees include aspen (Populus tremuloides) and hackberry (Celtis occidentalis) (Johnson et al. 1976). These draws support stands of various shrubs including buffaloberry (Shepherdia argentea), currant (Ribes americanum and others), chokecherry (Prunus virginiana), plum (P. americana), buckbrush (Symphoricarpos occidentalis), juneberry (Amelanchier alnifolia) and Wood's rose (Rosa woodsii). Various mesophytic forbs, such as Canada violet (Viola canadensis) and false solomon's seal (Smilacina stellata) can also be found within the stands of trees. Where the shrubs or trees are not particularly dense, such as on the slopes of these draws, grasslands of the Andropogon scoparius type are commonly present. Although this community is relatively small in aerial extent, it provides important travel corridors, cover and winter food for much of the big game that inhabits, or formerly inhabited, the prairie region (Whitman and Wali 1975). The concentrations of edible berries, the presence of wood, and game trails may well have made the draws attractive to aboriginal cultures as well as wildlife.

The two lower terraces along the Missouri River support a floodplain forest and a mosaic of other vegetational communities. In addition to forests, these include marshes, sand dunes and sandbars, and brushland (Johnson et al. 1976).

The Marsh community occurs in old channels of the Missouri River and its tributary streams. This community is usually dominated by cattails (Typha spp.). Various other emergent hydrophytes are also present including bulrush (Scirpus spp.), giant reed (Phragmites australis) and reed canarygrass (Phalaris arundinacea). Such forbs as water plantain (Alisma spp.) and arrowleaf (Sagittaria spp.) are found in shallows within the marshes. Marshes are much more frequent in the project area at the present time due to shallow flooding of the terraces by Lake Oahe.

On their dry sides, marshes merge into a Wet Meadow community, dominated by tall graminoids. Preeminent among these are sedges (Carex spp.), spikerushes (Eleocharis spp.), reedgrass (Calamagrostis inexpansa), mannagrass (Glyceria spp.), reed canarygrass, and prairie cordgrass (Spartina pectinata). These normally tall graminoids form a dense vegetative cover. Such forbs as iris (Iris missouriensis), giant goldenrod

(Solidag gigantea), Jerusalem artichoke (Helianthus tuberosus, other species of Helianthus), field mint (Mentha arvensis), blue vervain (Verbena hastata) and dock (Rumex spp.) are normally present in this community. Where wet meadows have been heavily grazed many of the native grasses have been replaced by introduced grasses such as Kentucky bluegrass (Poa pratensis) and quackgrass (Agropyron repens) (Keammerer et al. 1975) or redtop (Agrostis stolonifera). Wet meadows also extend along tributary streams and the moist bottoms of Hardwood Draws in the upper terraces.

On the wet side of the marsh, generally where water is greater than six feet deep, emergent aquatics disappear and submerged aquatics such as pondweed (Potamogeton spp.), coontail (Ceratophyllum demersum) and horned pondweed (Zannichellia palustris) appear. Floating-leaved aquatics such as yellow water lily (Nuphar luteum) as well as various algae are also present. These species provide a loosely knit Lacustrine Community which is a valuable food source for migrating and resident waterfowl.

Active sand dunes and sandbars are found adjacent to the river channel. These are normally sparsely vegetated. The Sand Dune community contains scattered sedges or horsetails (Equisetum spp.) and is sometimes stabilized by saplings of cottonwood (Populus deltoides), various willows (especially Salix interior, S. amygdaloides, S. missouriensis and S. lutea), sandreed, Indian ricegrass (Oryzopsis hymenoides) and lemon scurfpea (Psoralea lanceolata). Sandbars, although included within this community, also contain numerous semiaquatic plants such as bulrush and rush (Juncus spp.) in addition to sedges (Johnson et al. 1976; Keammerer et al. 1975).

For the most part the lower alluvial terraces contain floodplain forests. Grazing in many of these areas has allowed a proliferation of shrubs such as Wood's rose and buckbrush, as well as the introduced shrub fly honeysuckle (Lonicera tatarica), creating a Brushland Grazing Disclimax community (Johnson et al. 1976).

The overstory of the floodplain forest, often called gallery forest, contains cottonwood, peachleaf willow (Salix amygdaloides), green ash, box elder, American elm and bur oak. Occasionally such shrubs as chokecherry, buffaloberry and Russian olive (Elaeagnus angustifolius, introduced) may reach tree size (Johnson et al. 1976). Other common shrubs or woody vines include red-oiser dogwood (Cornus stolonifera), poison ivy (Rhus radicans, present as both shrubs and woody vines), juneberry, woodbine (Partenocissus inserta), foxgrape (Vitis vulpina) and, occasionally, bittersweet (Celastrus scandens) and Virgin's bower (Clematis ligusticifolia) (Keammerer et al. 1975; Johnson et al. 1976).

The floodplain forest may be divided into two general communities: a Cottonwood Forest community and a Mesic Forest community. The Cottonwood Forest community generally occurs on sandy soil near the Missouri River or on the lower of the two alluvial terraces. Young cottonwood forests contain many small trees but few other woody species. Older cottonwood forests contain tall, widely spaced trees and numerous tall shrubs, saplings and herbs (Johnson et al. 1976). The shrubs include those listed above. Herbs include field mint, bergamot (Monarda fistulosa), vetch (Vicia americana) and wild licorice (Glycyrrhiza lepidota). Some of the older cottonwood forests occurring on sand are more open and xeric. These contain a large number of prairie grasses and forbs in the understory

(Keammerer et al. 1975) including the tall-grass big bluestem and such forbs as Jersulam artichoke, ground cherry (Physalis heterophylla) and fragrant giant hyssop (Agastache foeniculacium).

The Mesic Forest community generally occurs on the higher of the alluvial terraces in silty or clay soils. Overstory is provided by green ash, box elder, American elm and bur oak. This forest has a relatively closed canopy and lacks the tall shrub and sapling layer present in the preceding community although arrowwood (Viburnum lentago) may be relatively common. Lianas, or woody vines, including bittersweet and fox grape are common. Forbs present in this community include sweet cicely (Osmorhiza longistylis), Indian hemp (Apocynum sibiricum) and field mint (Johnson et al. 1976; Keammerer et al. 1975).

Fauna

Most of the mammals found in the study area are equally common in both the Upper Sonoran life zone and the more northern and eastern Transition Zone within North Dakota (Bailey 1926). Specific to the Upper Sonoran Zone, however, are woodrats (Neotoma cinerea), prairie dogs (Cynomys ludovicianus), and, in the recent past, black-footed ferrets (Mustela nigripes) and badlands mountain sheep (Ovis canadensis auduboni).

Other mammals characteristic to both the Upper Sonoran and the Transition zone include Richardson ground squirrels (Spermophilus richardsonii), thirteen-lined ground squirrels (Spermophilus tridecemlineatus), several species of field mice (Peromyscus sp.), white-tailed jackrabbits, (Lepus townsendii), cottontail rabbits (Sylvilagus floridanus), weasels (Mustela frenata), mink (Mustela vision), beaver (Castor canadensis), striped skunks (Mephitis mephitis), red foxes (Vulpus vulpes), coyotes (Canis latrans), white-tailed deer (Odocoileus virginianus), mule deer (Odocoileus hemionus) and antelope (Antilocapra americana). In the recent past, bison (Bison bison bison), elk (Cervus canadensis), wolves (Canis lupus), black bears (Ursus americanus) and grizzly bears (Ursus horribilis) are known to have inhabited the study area (Bailey 1926).

Characteristic breeding birds include many varieties of raptors, waterfowl and perching birds. Bailey (1926) gives an extensive list of these species which include the mourning dove (Zenaidura macroura), burrowing owl (Speotyto cunicularia), great horned owl (Bubo virginianus), short-eared owl (Asio flammeus), Franklin gull (Larus pepixcan), ferruginous hawk (Buteo regalis), Swainson's hawk (Buteo swainsoni), red-tailed hawk (Buteo jamaicensis), sharp-tailed grouse (Pedioecetes phasianellus), sage grouse (Centrocercus urophasianus), magpie (Pica pica) and canvasback duck (Aythya valisineria). Both bald (Haliaeetus leucocephalus) and golden (Aquila chrysaetos) eagles were observed during the field work. In addition, numerous water fowl and shorebirds migrate through this region.

Characteristic reptiles include the plains garter snake (Thamnophis radix), bull snake (Pitnophis sayi), prairie rattlesnake (Crotalus viridis), painted turtle (Chrusemys picta), snapping turtle (Chelydra serpentina) and horned toad (Phrynosoma douglassi). Common amphibians

include the tiger salamander (Ambystoma tigrinum) and several varieties of frogs (Rana sp.) and toads (Bufo sp.) (Wheeler 1954).

Fish species in the Missouri River are both abundant and highly subject to the influence of man. Archeological investigations just south of the study area at the Jake White Bull site (39C06) have revealed the presence of gar (Lepisosteus sp.), minnows and carp (Hypobis sp.), white sucker (Catostomus commersoni) and several varieties of catfish (Ictalurus sp.) (Ahler 1977:175). In addition, Tabeau mentions the presence of sturgeon traps along some of the tributary streams to the Missouri (Abel 1939:92).

Many of the vertebrates mentioned in the preceding paragraphs were utilized by the prehistoric inhabitants of the Middle Missouri subarea. Primary among these must be considered the American buffalo or bison (Bison bison bison). Early historic accounts indicate that there were, at times, immense numbers of these animals along the Missouri River.

In addition to bison, white-tailed deer, mule deer and antelope were highly utilized (Abel 1939; Will and Spinden 1906). Maximilian claimed that beaver were indispensable to the Mandan both for their skins and for their fleshy tails, considered a delicacy (Thomas and Ronnefeldt 1976:241). With the exception of horses and buzzards, Maximilian claimed the Mandans ate virtually any animal, including bear, wolf, fox and turtles.

Land Use

Euroamerican land use within and adjacent to the project area has been based in agriculture, ranching and, until the inundation or flooding of the bottomlands, timber exploitation (see Chapter 5 of this report). Important crops in this area have included oats, wheat, flax and hay (e.g., sweetclover and alfalfa) (Edwards and Ableiter 1951:17). Wheat, flax, sweetclover and alfalfa were observed during the 1984 survey. Grazing of cattle and beekeeping were also taking place on or adjacent to U.S. Army Corps of Engineers maintained land.

Based on observations during the 1984 inventory and descriptions by Lawson (1982), land use on the Standing Rock Reservation consists primarily of cattle ranching. Other land use observed during the 1984 survey includes a buffalo herd maintained by the Standing Rock Sioux and a number of fields in flax or hay (sweetclover or alfalfa).

Land use has changed significantly from the period prior to the closure of Oahe Dam and subsequent inundation of reservation land to the conditions observed in 1984. Historically, Sioux land use in this area centered on bottom lands of the Missouri River. Lawson (1982:50) estimates that:

> The Standing Rock and Cheyenne River Sioux lost a total of 160,889 acres to this project, including their most valuable rangeland, most of their gardens and cultivated farm tracts, and nearly all of their timber, wild fruit, and wildlife resources. The inundation of more than 105,000 acres of choice grazing land affected 75 percent of the ranchers on the Cheyenne River Reservation and 60 percent of those at Standing Rock. Ninety percent of the timbered areas on both reservations were destroyed.

CHAPTER THREE
RESEARCH ORIENTATION

Thomas K. Larson and Dori M. Penny

A primary goal of this project is to provide the type of data necessary to make responsible management decisions about the cultural resources within the project area. In accordance with this goal, many researchers are focusing on predictive modeling. In particular, recent research has focused on the potential interrelationships of site location with physiographic, locational and environmental variables on a site locale or within the vicinity of the site (Hudson 1969; Kvamme 1981, 1983; Archer et al. 1982; Larson et al. 1986).

This approach is based on earlier work in biology (e.g., Hutchinson 1957; Pielou 1974) and in geography (Hudson 1969). In one of the seminal works in geographic location theory, (Hudson 1969:369) described the reasoning behind this approach.

> The existence, and magnitude of human settlement in an area may be thought of as being contingent upon m environmental variables, from which there may be derived a set of n variables which are independent in the statistical sense...Thus, the set of all possible values that the n linearly independent variables can take forms an n-dimensional vector space. This is called the niche space (N)....The bounded subset of points in this n-space that includes the permissible values is the innermost intersection of the subsets of permissible values on the n variables. This subset...is called the fundamental niche of the population.

Larson et al. (1986) developed a series of models incorporating a variation of this approach using environmental variables that were hypothesized to be good predictors of site location. Data were derived from the Larson-Tibesar Associates' 1983 cultural resource inventory along a portion of the left bank of Lake Oahe.

Environmental variables incorporated in this analysis included: (a) horizontal distance to the center of the Missouri River, (b) horizontal distance to the closest tributary to the Missouri River (c) horizontal distance to the second closest tributary to the Missouri River, (d) sinuosity index of the Missouri River at its closest point to the locale, (e) on-location slope, (f) aspect (referred to as "view spread" for the 1984 studies), (g) area of tree cover within a two mile radius of the locale, (h) area of brush cover within a two mile radius, and (i) distance to the closest timber. For more information on the calculation of these variables and the analysis, see Larson et al. (1986:107-109) and Chapter Seven of this report. Using prehistoric sites and non-site locations, none of the models formulated as a result of this analysis "have less than 89.92 percent accuracy in predicting site and non-site locations" (Larson et al. 1986:121).

This ability to predict site and non-site locations with approximately 90 percent accuracy has the potential to be used as a valuable management tool. One of the greatest difficulties with survey in the project area is the erosional environment created by man-made lakes:

> Survey efforts along the reservoirs in the Middle Missouri subarea have demonstrated that cultural resource properties are continually being exposed. Even after a modern surface inventory has been completed, the chances of unrecorded sites becoming exposed and ultimately destroyed is good [Larson et al. 1986:138].

Therefore, the same type of analysis was conceived for the 1984 inventory.

The 1983 Oahe model (Larson et al. 1986) concerned only the area from a point south of Bismarck, North Dakota to the North Dakota/South Dakota state line along the left bank of Lake Oahe. One of the goals of the analysis of the 1984 inventory results is to determine the efficency of these models over a much larger area. Therefore, comparable data generated from the 1984 inventory was combined with that of the 1983 inventory for this analysis. The efficiency of the models is therefore tested over a greater range of physiographic locational and environmental variation. It is expected that the statement "proximity to a greater diversity of environmental settings may result in greater resource productivity (e.g., Reher and Witter 1977) and/or greater resource predictability" (e.g., Fawcett and Francis 1981) will remain true for these sites (Larson et al. 1986:25).

Methods for calculation of environmental variables, an explanation of the analysis and the results are presented in Chapter Seven. The implications of the results are discussed in Chapter Eight.

The analysis of the data derived from the 1984 inventory of the right bank of Lake Oahe is also directed toward answering questions pertaining to temporal and ethnic affiliations of historic and prehistoric sites. These questions include:

1) On both sides of the river, there appear to be two distinct clusters of Woodland sites, one between Huff and Fort Rice and another from Fort Yates south to the state line. Can these patterns be substantiated and, if so, what are their implications in terms of cultural adaptation to the area?

2) There is an obvious concentration of village sites (Extended Middle Missouri, Terminal Middle Missouri and Post-Contact Coalescent) in the northern portion of the Cannonball region and adjoining southern portion of the Knife-Heart region. Can the environmental factors influencing this settlement pattern be quantified?

3) The literature search indicates the historic Arikara used the study area as part of their hunting area. Can such camps be found and identified?

4) In addition to Arikara hunting camps, can other "extra-village activity areas" (e.g., Steinacher 1981:93) be located

and, if so, which traditions and variants will they be related to?

5) Do site attributes such as site size and ceramic assemblages bear out the usual interpretation that, in the Upper Cannonball region, most village sites which are small and unfortified are from the Extended Middle Missouri variant, while all sites from the Terminal Middle Missouri variant are large and fortified (e.g. Thiessen 1976; Sperry 1982)? [Larson-Tibesar Associates 1984:1-12].

CHAPTER FOUR
AN OVERVIEW OF THE PREHISTORIC, PROTOHISTORIC AND EARLY HISTORIC NATIVE AMERICAN CULTURES IN THE PROJECT AREA

Dori M. Penny, Paul H. Sanders and Thomas K. Larson

Introduction

Most recent classifications of archeological units in the Great Plains have either directly or indirectly indicated that both chronological control and a concept of cultural-historical development are necessary in order to best describe prehistoric manifestations. The traditional concept of a "period" as a rigid block of time (e.g., Krieger 1953:247) is not a sufficient scheme by itself. This is because various cultural manifestations are now known to have overlapped and coexisted on both sides of arbitrary time lines. On the other hand, the use of the unmodified cultural-historical development scheme as developed by Willey and Phillips (1958) would tend to disregard or overlook basic and important research questions which are clearly related to absolute chronology.

A number of writers have attempted to resolve this problem. In his discussion of the prehistory of the Plains area Willey (1966:311-313) uses what are essentially two separate schemes: Cultural traditions to discuss the characteristics of prehistoric lifeways and cultural periods to describe absolute blocks of time. Lehmer (1971:29-30) uses the term "period" to indicate "an epoch during which there was a dominance of a particular culture climax, or major cultural tradition..." This would seem to imply that, while Lehmer did draw somewhat arbitrary lines to divide his periods, he realized that such lines only delimited the "dominance" of a particular cultural tradition and not necessarily its total existence in time. Frison, taking a different approach, suggests that the term "period" should be used to reflect changes in economic subsistence patterns: "cultural stages are involved and arbitrary time lines are not realistic unless there are concomitant observable cultural changes" (Frison 1978:20).

The differences between these three approaches can be seen in Figure 4.1. Since they are entirely separate concepts, Willey's (Figure 4.1a) phases and cultures crosscut his periods. For the Central Plains and Middle Missouri subareas, Lehmer presents complexes and traditions which are contained within period boundaries (Figure 4.1b) since these are seen as the major or dominant manifestations within all of or a portion of a period. On the other hand, Lehmer seems to contradict himself in that "foraging complexes" in the Northwestern Plains subarea are viewed in a more fluid manner which allows them to crosscut periods. Although less detailed, Lehmer's description of Northwestern Plains complexes is consistent in philosophy with the scheme presented by Frison (i.e., that such units represent economic subsistence patterns, not blocks of time; see Figure 4.1c).

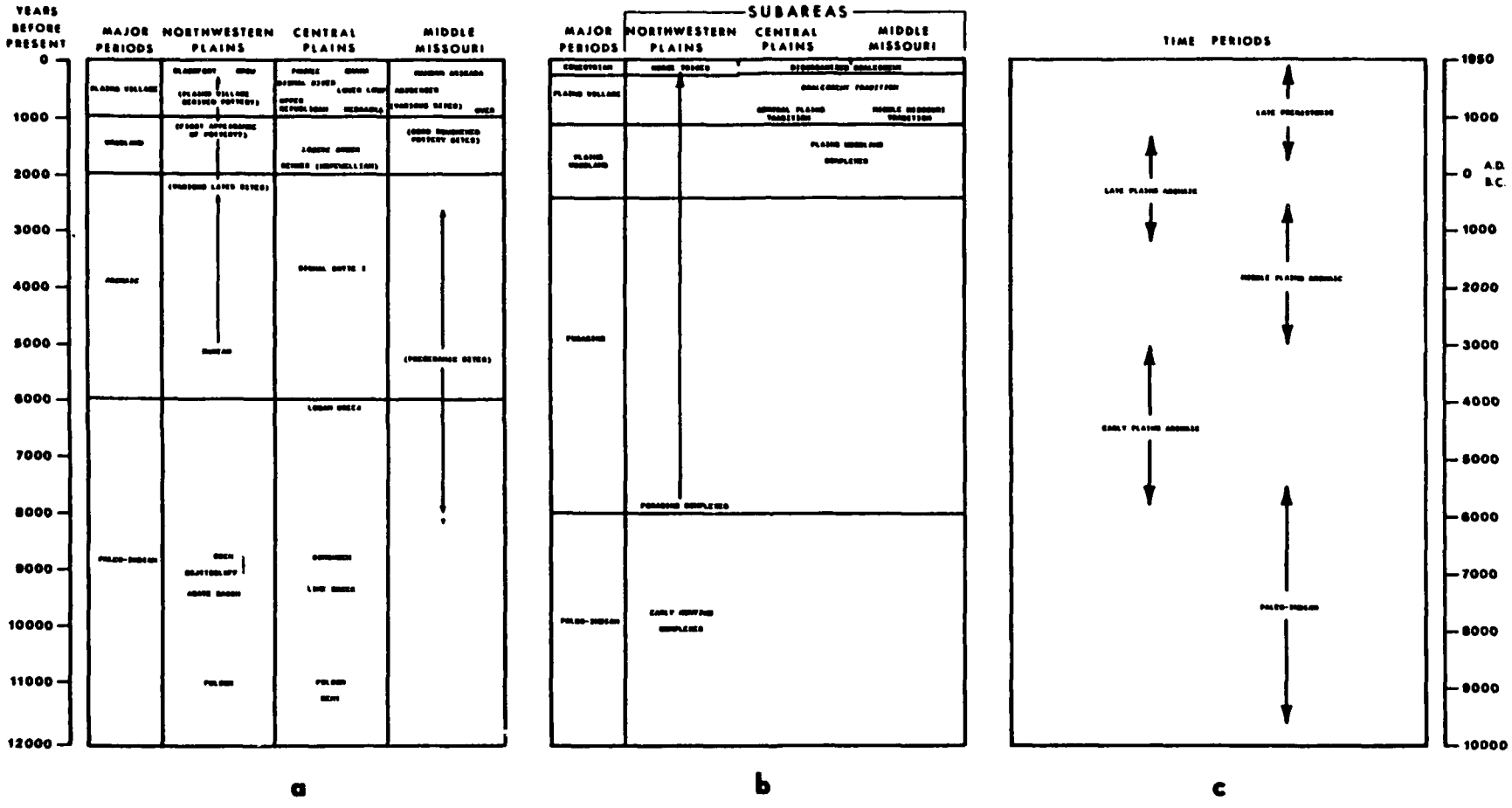

Figure 4.1. Taxonomic schemes which have been proposed for the Plains. Figure 4.1a adapted from Willey (1966); Figure 4.1b from Lehmer (1971); and Figure 4.1c, developed for the Northwestern Plains, adapted from Frison (1978).

Since none of the schemes discussed above have received universal acceptance in the Plains, it would seem to be advantageous to combine the most useful characteristics of each so that the most accurate comparisons can be drawn. Figure 4.2 presents a chronological and developmental sequence which will be used throughout this report. As with Willey's (1966) presentation, an explicit distinction has been made between chronological units (periods) and units which more closely correspond to cultural-historical development (traditions, variants, phases, etc.). However, greatly increased data since the publishing of Willey's synthesis make the categories used by him somewhat inadequate.

For the purposes of this study, the chronological framework proposed for the Northwestern Plains by Frison (1978) has been expanded to include the Middle Missouri subarea. This scheme is utilized since it categorized more recently discovered and/or dated cultural components and also articulates quite well with previously recognized sequences in the Middle Missouri subarea (Lehmer 1971).

It should be noted that, while the terms for the periods utilized by Frison are the same, his concept of overlapping periods has not been incorporated here. It is believed that a more appropriate term for such a concept is "tradition". "A (primarily) temporal continuity represented by persistent configurations in single technologies or other systems of related forms" (Willey and Phillips 1958:37). As with Willey's original scheme for the Plains, the names for many periods and traditions are the same. This is closely analogous to Lehmer's (1971:29) concept in that the period *name* reflects the "dominance of a particular cultural climax tradition."

A concept of "variant" is not present within the original Willey and Phillips scheme. The term was originally used by Lehmer (1968:9) in the Middle Missouri subarea and was later extended to the Central Plains by Krause (1969:95). Krause (1977:10) defines the variant as:

> a mid-range taxon which has less content, greater time span and greater spatial spread than a phase, but less time span than tradition and less spatial spread than a horizon...So construed, the variant fits securely within the paradigmatic logic of the Willey and Phillips System.

Many objections have been raised concerning the use of the term (e.g., Blakeslee et al. 1982; Zeier 1982). For the purposes of this study, variant is viewed as a viable taxon and its use has been somewhat expanded to refer to Woodland as well as Plains Village components (see Figure 4.2). The subdivisions of Plains Woodland (Middle Woodland, Late Woodland, etc.) are here considered variants. Should it be possible in the future to clearly define regional taxa within these Woodland variants, these would be considered as phases under the scheme presented here (e.g., "the Sonota phase").

As Figure 4.2 illustrates, the known temporal span of many traditions and/or variants is such that they overlap one another in time. This is particularly true for cultural manifestations which occurred from the last one-third of the Late Plains Archaic period up to the Protohistoric/Historic period. Due to these overlaps, for instance, no

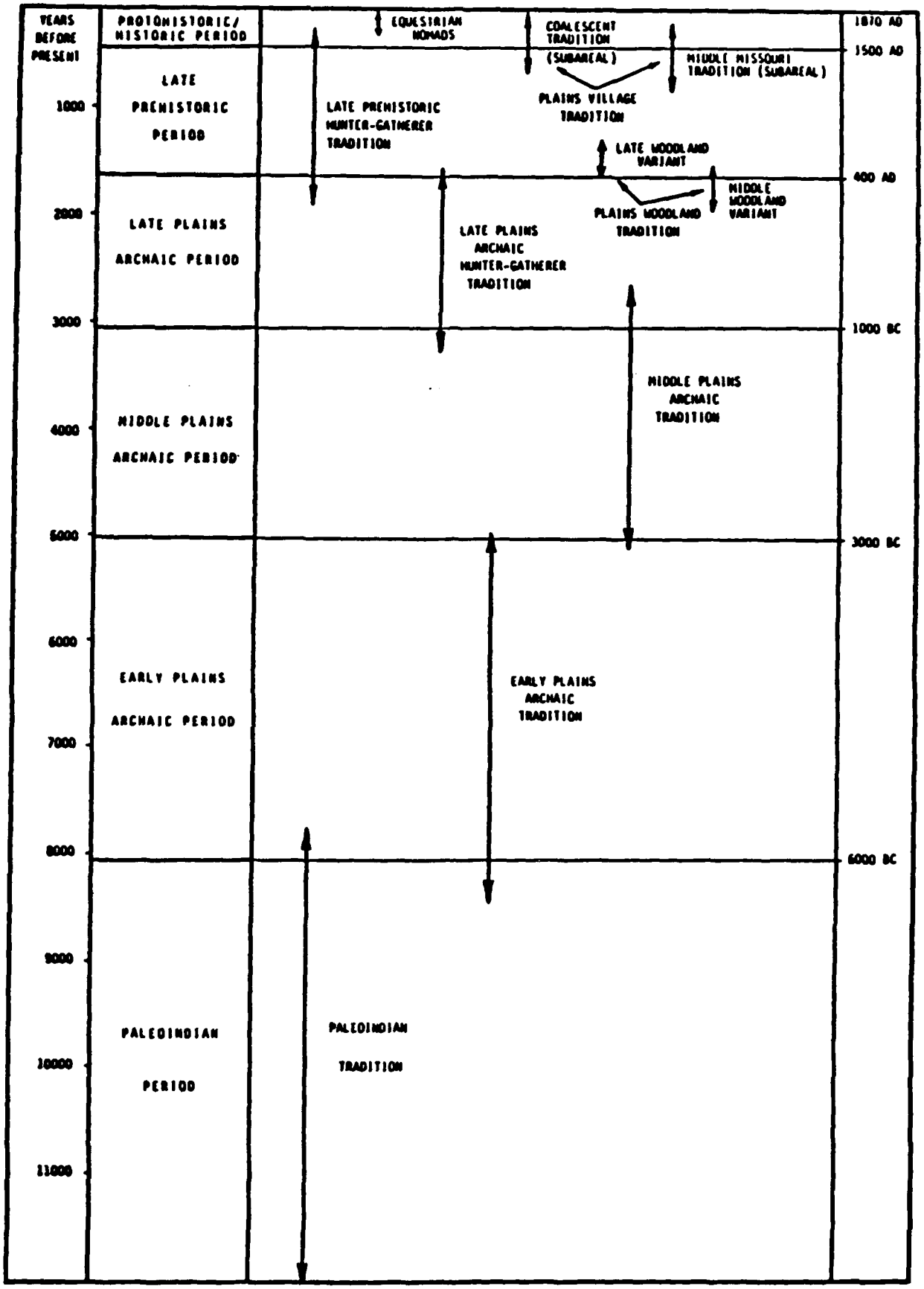

Figure 4.2. Proposed taxonomic scheme for cultural manifestations encountered during the 1984 Lake Oahe survey.

"Woodland period" can be recognized since various Woodland manifestations now appear to have co-occurred with other groups both during the Late Plains Archaic and the Late Prehistoric periods (see Figure 4.2).

It is important to understand the potential ramifications of such temporal overlap to the present study. In many cases neither relative nor absolute dates, by themselves, should be used to conclusively link an archeological manifestation to a particular cultural tradition, variant or phase. To do so greatly oversimplifies what is known about the archeological record, particularly during the last two thousand years.

Following the spatial terminology utilized by Lehmer (1971:28-29), the study area is considered to be within the northern three-quarters of the Cannonball region of the Middle Missouri subarea. The Middle Missouri subarea is, in turn, part of the Plains area. Within the Cannonball region sites are known, or can be reasonably expected, to exist which reflect Paleoindian, Archaic, Woodland, Plains Village and general Late Prehistoric/Protohistoric hunter-gatherer populations.

Paleoindian

The earliest cultural complex recognized in North America is the Clovis Complex, dating from approximately 12,000 B.P. to 11,000 years B.P. No Clovis complex sites have been recorded within the project area. In addition, no Folsom complex (10,800-10,000 years B.P.) sites or Plano (10,000-7500 years B.P.) sites are recorded within the study area. However, Clovis, Folsom and Plano occupations are known from western North Dakota and western South Dakota (Wood 1983:28-29).

> ...lack of Clovis and other early sites in the project area [results from] the fact, that to date, attention has been focused on the highly visible and productive Woodland mounds and later earth lodge [sic] villages in the area. Furthermore, the probability is high that early sites are likely to be in locales not yet surveyed, so that the possibility is strong that such sites exist, for example, in deeply buried contexts along the Missouri River or along its tributary streams....Shoreline survey along Missouri River reservoirs are beginning to reveal buried Paleo-Indian through Archaic sites on level ground well above the floodplain and terrace levels, near the rim of the river bluffs....one such example, in the Garrison Reservoir, is the Moe site, which contained Paleo-Indian through historic occupations (Schneider 1975). A second such site, Walth Bay, is on the Missouri River in the Oahe Reservoir just downstream from modern Mobridge, South Dakota. It contains late Paleo-Indian through Archaic materials (Ahler et al. 1974). It is reasonable to expect similar situations in the project area, although such settings are well above the reservoir shoreline.

Archaic/Woodland

A number of sites in or near the project area are classified as Archaic/Woodland manifestations. Among these are seven excavated sites

(Table 4.1). These sites include 32EM21 (Root and Gregg 1983), 32MO20 (Schmidt Mounds; Neuman 1975), 32MO61 (Root and Gregg 1983), 32MO207 (Neuman 1961), 32SI1 (Boundary Mounds; Wood 1960), 32SI6 (Porcupine Creek component; Scheans 1957) and 32SI200 (Alkire Mound; Henning 1965).

No definite Early Archaic sites are known within the immediate area of the inventory. Some Early Archaic sites have been recorded in western North Dakota and South Dakota and the Black Hills. These include the Anderson Divide sites (Beckes and Keyser 1982).

Middle Archaic manifestations on the Northern Plains are marked by the presence of McKean complex projectile points. McKean points are know, from areas surrounding the project area. Larson (1986:33-34) states that:

> During the Late Plains Archaic period and the beginning of the Late Prehistoric period, a distinction is recognized between the Late Plains Archaic Hunter-Gatherer tradition and the Plains Woodland tradition. A number of sites either within or very near to the study area have been recorded which contain projectile point varieties (e.g., Pelican Lake materials) which are known to date from the Late Plains Archaic period and which are not believed to be related to the Plains Woodland tradition. Additionally, since ample data are available to link Besant projectile point to both Woodland and Late Archaic hunter-gatherer traditions (Wettlaufer 1955; Neuman 1961; Frison 1971; Johnson 1977), it is not believed that presence of these points on a site can automatically be assumed to indicate a Woodland occupation. The environmental setting of the Missouri Valley would probably have been equally as attractive to generalized hunter-gatherers as it was to incipient horticulturalists. Indeed as further research is conducted in the region, it seems likely that the distinctions between the two types of groups will be quite subtle and difficult to quantify.
>
> Two variants within the Plains Woodland tradition are also proposed. While the evidence for a Late Woodland variant is still relatively rare, sites such as 32MO98 (Larson et al. 1983:136), the Jamestown Mound group (Snortland-Coles 1983), the Magpie Road site (Campbell et al. 1983) and data from the Cross Ranch inventory (Ahler, Lee and Falk 1981) all point to the existence of Late Woodland cultures in the Northern Plains whose weaponry, ceramics, and, perhaps, mode of subsistence were distinctly different from the preceding Middle Woodland cultures. It is these types of sites which are considered part of the Late Woodland variant under the taxonomic scheme presented in this chapter.
>
> It is also believed that evidence exists which documents the presence of Late Prehistoric hunter-gatherers and equestrian nomads within the study area. While they no doubt interacted, these groups are believed to have been distinctively separate from the better documented Plains Village cultures of the region.

A number of sites within or adjacent to the project area are classified as Late Archaic/Middle Woodland manifestations. These include but are not

Table 4.1. Excavated sites in the vicinity of the project area.

Site No.	Site Name	Instit.	Excavator	Years Worked	Cultural Unit	References
32BL8	Double Ditch	HU	Will	1905	HRP	Will & Spinden 1906
32EM1	Havens	SHSND	Sperry	1967-8	EMM	Sperry 1982
32EM3	Tony Glas	SHSND	Howard	1958	EMM	Howard 1958
32EM10	Shermer	SHSND	Sperry	1965-6	TMM	Sperry 1968
32EM21		UND	Gregg	1980	Woodland	Root and Gregg 1983
32MO2	Bendish	MWAC	Johnston	1969	EMM	Thiessen 1975
32MO11	Huff	SHSND	Hecker Howard Wood	1938 1959 1960	TMM	Will, Hecker 1944 Howard 1962 Wood 1967
32MO20	Schmidt Mound	MBP	Neuman	1960	Woodland	Neuman 1975
32MO26	On-a-Slant	CU UND	Strong Schneider	1938 1979	HRP	Strong 1940 Ahler et al. 1981
32MO37	Boley	DC	Lehmer	1964	HRP	Lehmer n.d.
32MO61		UND	Gregg	1983	Archaic	Root and Gregg 1983
32MO207	Unnamed mound	MBP	Neuman	1960	Woodland?	Neuman 1961
32SI1	Boundary Mounds	SHSND MBP	Wood Neuman	1956 1960	Woodland	Wood 1960 Neuman 1975
32SI2	Fire Heart Creek	SHSND	Lehmer	1964	EMM,DC	Lehmer 1966
32SI3	Robert Zahn	SHSND	Woolworth	1955	EMM	Wood and Woolworth 1964

Table 4.1 (cont.). Excavated sites in the vicinity of the project area.

32SI4	Paul Brave	SHSND	Woolworth	1955	EMM	Wood and Woolworth 1964
32SI6	Porcupine Creek	SHSND	Scheans	1957	Woodland, Dakota	Scheans 1957
32SI7	Ben Standing Soldier	MBP	Hoffman	1965	EMM	Hoffman n.d.
32SI8	Jerome Standing Soldier	SHSND	Scheans	1957	EMM, Historic Dakota	Scheans 1957
32SI19	South Cannonball	MBP	Hoffman Johnston	1965 1966-7	EMM	Griffin n.d.
32SI76	Yellowlodge	SHSND	Scheans	1957	Historic Dakota	Scheans 1957
32SI77	Meadow	SHSND	Scheans	1957	EC	Scheans 1957
32SI200	Alkire Mound	SHSND	Lehmer	1964	Woodland	Henning 1965
39C01	Demery	SHSND	Woolworth	1956	EC	Woolworth and Wood 1964

* Adapted and updated from Wood (1983) and Lehmer (1971:Appendix 1)

INSTITUTIONS

CU	Columbia University
DC	Dana College, Blair, Nebraska
HU	Harvard University
MBP	Missouri Basin Project, Smithsonian Institution
MWAC	Midwest Archeological Center, National Park Service
SHSND	State Historical Society of North Dakota
UND	University of North Dakota, Grand Forks

CULTURAL UNITS

EMM	Extended Middle Missouri variant
TMM	Terminal Middle Missouri variant
EC	Extended Coalescent variant
HRP	Heart River phase, Post-Contact Coalescent variant
DC	Disorganized Coalescent variant

limited to 32EM30, 32EM78, 32EM79, 32EM95, 32EM97, 32EM112 and 32EM354 (Larson et al. 1986); 32EM21 (Root and Gregg 1983; Larson et al. 1986); 32M098 (Larson et al. 1983); 32M0207 (Neuman 1961; Larson et al. 1983); and 32M017 (the Sugarloaf Butte site, Johnson et al. n.d.). "Related excavated sites include the Boundary Mounds, 3SI1, of the Sonota Complex, the Alkire mound, 32SI200; and the Porcupine Creek component at 32SI6 (Henning 1965; Neuman 1975; Scheans 1957)....The Schmidt Mound, 32M020, is probably a Sonota complex mound (Neuman 1975:79)...."(Wood 1983:30-31).

Late Woodland sites in the project area include 32EM79 (Larson et al. 1986:98) and 32M098 (Larson et al. 1983:83). At 32EM79, body sherds believed to be related to the Late Woodland component were recorded. They are cord roughened with small, tool impressed decorations on the exterior surface (Larson et al. 1986:98). Projectile points collected from 32M098, Area B are small and either side notched or unnotched (Larson et al. 1983:137).

Plains Village

Plains Village manifestations are the best known of the traditions recognized within the Middle Missouri subarea.

> The Plains Village tradition, according to the scheme first proposed by Donald J. Lehmer (1954), began as two separate subtraditions about A.D. 900. One of them, the Central Plains tradition, occupied the Central Plains (specifically, the river systems of eastern Nebraska and contiguous portions of Kansas and Iowa), and the other, the Middle Missouri tradition, occupied the valley of the Missouri River in what is now south central South Dakota, and the valleys of other major streams in southeastern South Dakota.
>
> About A.D. 1500, according to Lehmer's view, representatives of the Central Plains tradition moved north to the Missouri River in central South Dakota, where they came into contact with the Middle Missouri tradition. The resulting culture change so modified both traditions that they lost much of their former distinctiveness in material culture and architecture. The fusion of the two traditions resulted in the Coalescent tradition, which in the Missouri valley of North and South Dakota, led to the historic Mandan, Hidatsa, and Arikara Indians and, in the Nebraska area, the historic Pawnee Indians [Wood 1983:31-32].

Within the Middle Missouri tradition three variants are recognized. These are the Initial Middle Missouri (A.D. 900-1400), the Extended Middle Missouri (A.D. 1100-1550) and the Terminal Middle Missouri (A.D. 1550-1674).

The Initial Middle Missouri appears to have been restricted to an area now in southeastern South Dakota. The Extended Middle Missouri is well represented by sites within and immediately adjacent to the project area. These sites include Fire Heart Creek (32SI2; also has a Disorganized Coalescent component), Robert Zahn (32SI3), Paul Brave (32SI4), Ben Standing Soldier (32SI7), Jerome Standing Soldier (32SI8), South Cannonball

(32SI19), Bendish (32MO2), Upper Fort Rice (32MO4), Gwyther Farm (32MO5), Watson Homestead (32MO8), Smith Farm (32MO10), Jennie Graner (32MO12), Bernhard Schmidt (32MO19) and Havens (32EM1). Excavated sites include Fire Heart Creek (32SI2; Lehmer 1966); Ben Standing Soldier (32SI7; Hoffman n.d.), Jerome Standing Soldier (32SI8; Scheans 1957), South Cannonball (32SI19; Griffin n.d.), Bendish (32MO2; Thiessen 1975), and Havens (32EM1; Sperry 1982). Table 4.1 provides additional information about excavated sites within or near the project area.

Sites assigned to the Terminal Middle Missouri within or immediately adjacent to the project area include Huff (32MO11), Cadell Homestead (32MO7), Lower Fort Rice (32MO3), North Cannonball (32MO1) and Shermer (32EM10). Huff (32MO11; Wood 1967) and Shermer (32EM10; Sperry 1968) have been excavated.

Four variants are recognized within the Coalescent tradition. These are the Initial Coalescent (A.D. 1400-1550), the Extended Coalescent (A.D. 1550-1675), the Post-Contact Coalescent (A.D. 1675-1780) and the Disorganized Coalescent (A.D. 1780-1862). The Initial Coalescent has been identified only in the Big Bend region, considerably south of the 1984 project area.

Extended Coalescent sites within and immediately adjacent to the project area include Meadow (32SI77) and Demery (39CO1). Both sites have been excavated (Scheans 1957 and Woolworth and Wood 1964 respectively). Meadow has apparently been destroyed by inundation. Most Extended Coalescent sites are known from the area north of the White River to the South Dakota/North Dakota state line and from the Knife River region (Lehmer 1971 and Wood 1983).

No Post-Contact Coalescent sites have been identified within the project area. Most Post-Contact Coalescent sites are concentrated in an area immediately north of the survey area.

> Ethnology and ethnohistory document some significant distinctions between the three tribal groups in the late 18th and early 19th centuries. The Arikara spoke a Caddoan dialect. The Mandan and Hidatsa languages were both Siouan, but they differed from each other to the point of mutual unintelligibility....
>
> There were other differences in the nonmaterial culture of the 19th-century villagers. These, unfortunately, tend to be only dimly reflected in the materials with which the archeologist has to work. On the basis of the archeological record alone, the uniformities of Post-Contact Coalescent culture are much more apparent than the tribal differences.
>
> The similarities which characterize the cultures of the late village tribes were undoubtedly the product of a convergence of the Middle Missouri Tradition and the earlier manifestations of the Coalescent Tradition. The culture of the historic Mandan and Hidatsa was directly rooted in the Middle Missouri Tradition, but the northern village tribes had lost enough old traits and had added a sufficient number of new ones to place them well within the Coalescent range. Post-Contact Arikara culture was an

> outgrowth of the Extended Coalescent complex. But there were changes there too, especially in pottery and village plan. Those changes all worked to increase the similarity between 18th-century Arikara and Mandan-Hidatsa cultures [Lehmer 1971:136].

The time of the Post-Contact Coalescent also saw the rise of the equestrian nomadic groups. Lehmer (1971:164) explains:

> Cultural interactions among the villages of the Missouri Valley in the 18th century were dominated by a new element in the Northern Plains - the horse tribes. The sudden upsurge of the mounted bison hunters created a second power block in the region, which increased in importance year by year.

The trade in Euroamerican goods was central to the relationships between the horse tribes and Middle Missouri villagers. There is ample evidence for prehistoric trade networks (Lehmer 1971:68) and the introduction of Euroamerican trade goods essentially intensified this pattern. Lehmer (1971:166) notes that:

> The early fur trade pattern of fixed posts with a minimal penetration of the interior by Europeans meant that the Indians filled a major role in the operation. Members of some of the interior tribes had to make the long and dangerous journey down to the posts, bringing in cargoes of furs which were worth a fortune by European standards. They took back trade stuffs of fabulous value by Indian standards. Some of these goods were kept for their own use; the rest were passed along to tribes which were not in direct contact with the Europeans. In this way the earliest stage of the fur trade saw the development of groups of Indian middlemen who carried the trade far beyond the range of the European traders themselves.

The dates for the Post-Contact Coalescent, A. D. 1675-1780, represent an approximate date for the first Euroamerican trade goods reaching the Missouri Valley and the date of the disruption of the villages by a smallpox epidemic (Lehmer 1971:163). According to Lehmer (1971:174), the mortality rate among the Mandan, Hidatsa and Arikara was at least as high as that of the 1837 epidemic which averaged sixty percent.

The Disorganized Coalescent was named by Lehmer (1971:172) for the "disorganization" of the village tribes that followed this smallpox epidemic. As a result of the greatly reduced population of the Mandan, Hidatsa and Arikara there are simply fewer villages during this period (Lehmer 1971:174-175).

> Two Disorganized Coalescent sites are in the project area: Fire Heart Creek and Eagle Nose Butte. Fire Heart Creek (Lehmer 1966) appears to represent a protohistoric Arikara encampment, but Eagle Nose Butte (which lies about two miles west-northwest of the Huff site) is apparently a Mandan village occupied just before the time of Lewis and Clark (Thwaites 1904-05, 1-199; Will 1924:313) [Wood 1983:36].

At least three other smallpox epidemics occurred after that of 1780. They are recorded for the years 1801-1802, 1837-1838 and 1856. These epidemics continued to decimate the populations of the Mandan, Hidatsa and Arikara.

> When the Lewis and Clark Expedition went up the river in 1804, there were only eight occupied villages in the whole Middle Missouri Valley....These included three recently established Arikara towns a short distance above the Grand River, and the two Mandan and three Hidatsa settlements in the vicinity of the mouth of the Knife River. The Arikara abandoned their towns near the Grand in 1832 and five years later they settled in a deserted Mandan village near Fort Clark. In 1845, the Hidatsa and some Mandan survivors of the smallpox epidemic of 1837 established Like-a-Fishhook Village, and they were later joined there by the rest of the Mandan and by the Arikara in 1862. Thus by that year the geographic extent of the village tribes was reduced to a single community...[Lehmer 1971:175].

More information on Euroamerican activities during this era is presented in Chapter Five of this report.

Sioux Utilization of the Project Area

Introduction:

The Sioux have traditionally been portrayed as the archetypal Indian of the equestrian era. As with many generalizations applied to a large groups of people, there is ample evidence that this stereotype does not accurately summarize all Sioux lifeways.

Accounts of Sans Arc, Yankton and Yanktonai living in earthlodges and practicing horticulture are well known (e.g., Hanson and Gregg 1983; Wood 1983). Most of these studies presume that it was a mid-nineteenth century adaptation acquired as a result of the increasing difficulty of maintaining a nomadic lifeway. It is the purpose of this discussion to review accounts of Sans Arc, Yankton and Yanktonai use of earthlodges and horticulture with particular emphasis on the project area. As part of this discussion, it will be demonstrated that the utilization of earthlodges and horticulture among the Sans Arc, Yankton and Yanktonai antedates the mid-nineteenth century. In addition, several hypotheses pertaining to the acquisition of this lifeway will be discussed.

Winter Counts:

The earliest accounts noting earthlodges and horticulture among the Sioux are from winter counts. These winter counts have been described by Howard (1951; 1976) and are summarized in Table 4.2.

Table 4.2. Winter count references to the Sioux use of earthlodges and horticulture. Adapted from Howard (1951; 1976).

Winter Count	Year	Interpretation
John K. Bear Lower Yanktonai	1736	A thief was caught stealing corn.
The Flame Two Kettle Band	1815-1816	"hemispherical earthlodge" Large dirt lodges made by the Sans Arcs (Mallery 1886:109).
Lone Dog Yanktonai	1815-1816	The Sans Arcs made the first attempt at a dirt lodge. This was at Peoria Bottom, Dakota Territory (Mallory 1886:109).
Mato Sapa Minneconjou	1815-1816	In agreement with the Lone Dog winter count (Mallery 1886:99).
Major Bush unidentified	1815-1816	In agreement with the Lone Dog winter count (Mallery 1886:99).
American Horse Oglala	1815-1816	The figure is intended to represent a white man's house (Corbusier 1886:136). (in Mallery 1886)
Cloud Shield Oglala	1815-1816	Some of the Dakotas built a large house and lived in it during the winter (Mallery 1886:136).
Cloud Shield Oglala	1817-1818	They lived in the same house they did last winter (Mallery 1886:136).
White-Cow Killer Oglala or Brule	1815-1816	Made a house winter
White-Cow Killer Oglala or Brule	1817-1818	Made a house winter (Mallery 1886:136).
Battiste Good	1815-1816	The Sans-Arcs-made-large-houses-winter (Mallery 1893:316).
	1817-1818	Lived-again-in-their-large-houses winter (Mallery 1893:316).
High Hawk Oglala	1816	The Itazip-cho (Sans Arcs) lived in a large tipi (Curtis 1908:172).
	1817	The Itazip-cho again gather in one tipi (Curtis 1908:172).

Table 4.2 (cont.). Winter count references to the Sioux use of earthlodges and horticulture. Adapted from Howard (1951; 1976).

Winter Count	Year	Interpretation
White Bull	1832	Big-houses gable-roofed they-built Minneconjou and Hunkpapa (Vestal 1934b:348).
High Dog/Swift Dog	1816-1817	No-horn his-house they-danced-for Hunkpapa and Yanktonai or junk (bits of grass, branches and earth) big-lodge they-put-around (Howard 1951:6).
High Dog/Swift Dog	1832-1833	The first dance house built by Hunkpapa and Yanktonai with logs (Howard 1951:7).
Swift Dog	1817-1818	A council lodge where a buffalo head Hunkpapa is painted on the wall (Howard 1951:6).
Swift Dog	1832-1833	Big-lodges gable roofed they-built Hunkpapa (Howard 1951:7).

Euroamerican Accounts:

In between the earthlodge winters (1815-1816 and 1816-1817) and the log cabin/gable-roofed lodges year (1832) recorded in the winter counts, there is at least one Euroamerican account of what is apparently a Sioux earthlodge village from the *journal of the Atkinson-O'Fallon Expedition* (Reid and Gannon 1929; Hurt 1974). "The narrator noted that the Saone under Chief Fireheart were living in 'dirt villages'....From the Bad River the expedition proceeded upriver and located Fireheart's bank on the west side a mile below 'Hidden Creek'. This is one of the streams below the Moreau River and opposite a point above the Little Cheyenne River" (Hurt 1974:189). While Fireheart's band was later located further north, within the 1984 project area, this particular area is still some distance south of the survey boundary.

A number of similar accounts were recorded during the 1850s and 1860s. Alfred J. Vaughn (1855:71-73), an Indian Agent for the Upper Missouri, wrote in his report to Colonel Alfred Cumming, Superintendent of Indian Affairs, St. Louis, Missouri, that:

> ...at the principal village of the Yancton band of Sioux Indians June 22d, at a place called and known as "Handy's Point," thirty miles above "L'eau qui' Court," on the northeast side of the Missouri River. These Indians have made this point their permanent summer residence, and are raising corn, beans, pumpkins, &c., and, when I passed, had the prospect of an abundant crop.

Further up the river, Vaughn (1855:72) noted that:

> About 100 miles above Fort Pierre I found erected twelve lodges of the Yanktonais, built with dirt, after the manner of the Arikarees and Mandans, and they are tilling the soil in the same manner of those bands. I am sorry to say that the great drought in that region of their country was such that all kinds of vegetation presented but a very languishing appearance. This is the first attempt of this band to form a permanent village and cultivate the soil....

After 1855, the number of written Euroamerican accounts referring to Yankton or Yanktonai living in earthlodge villages increase. It is hypothesized that this is a function of increasing utilization of the area by bureaucrats who were concerned with record keeping (e.g., the military; Indian agents, etc.).

These accounts include Vaughan's (1857) reference to a permanent village "headed by the "Little Soldier" located about 100 miles below Fort Clark. Lt. G. K. Warren (1875:47) also recorded a dirt lodge village occupied in the summer by a small group of Yanktonai under Little Soldier. This village was located by Lt. G. K. Warren on the left bank of the Missouri on a bluff near a point opposite present day Fort Yates (Lt. G. K. Warren 1875b; Robert E. Warren 1986).

The Tripp accounts of 1863 describes an earthlodge village on the James River. The location of this village has been recently reviewed by Haberman (1983). Both villages in this area, Drifting Goose's Village and Dirt

Lodge Village were occupied at approximately the same time. Dirt Lodge Village is believed to be the site of the Dakota Rendezvous (Haberman 1983:50-55). These villages are considerably east of the project area.

Hurt and Howard's (1950:423-424) Yanktonai informant, Mr. John Saul, stated that the earthlodge was in use as late as 1882 near Ft. Thompson, South Dakota when he was five years old. This date would be fairly consistent with dates proposed by Scheans (1957) based on the results of excavation for the use of earthlodges by Sioux in the Battle-Porcupine Creek area of North Dakota. These sites were located on the right bank of the Missouri prior to the completion of Oahe Dam and subsequent inundation.

Summary and Discussion:

A number of earthlodge villages were recorded by Euroamerican observers within or near the project area after the mid-nineteenth century. It would appear that prior to the mid-nineteenth century and for sometime thereafter most of the earthlodge villages inhabited by Yanktonai, Yankton and Sans Arc were located either along the Missouri River in south-central or southern South Dakota or along the central portions of the James River.

The movement from the James River was the result of the further constriction of Sioux territory in June of 1879. Many of the other locations of villages mentioned in the accounts are within the boundaries of one of the reservations split off from the Greater Sioux Reservation in 1889.

The discontinuation of the earthlodge as a house type undoubtably resulted from pressure to acculturate. The construction of log cabins was heavily emphasized by both the agents and the missionaries (Milligan 1976).

The use of the earthlodge by the Yanktonai, Yankton and Sans Arc has been attributed to diffusion of culture traits from the Mandan, Hidatsa and Arikara (e.g., Howard 1960). Most authors have not attempted to refute the diffusionist basis of the model. Rather, they have attempted to show that the model does not generally apply to the Sioux (e.g., Robert E. Warren 1986). This is a fallacious test of the model, since Howard (1951, 1960,; Hurt and Howard 1950) never intended his model to apply in a general way to the description of Sioux lifeways. Rather, it is the case that Howard (1951, 1960; Hurt and Howard 1950) cited specific instances pertaining to the Yanktonai and Yankton whom he had reason to believe utilized earthlodges during a portion of the nineteenth century.

If we are willing to accept winter counts, historic accounts, archaeological and informant data as evidence that the Yanktonai, Yankton and Sans Arc utilized the earthlodge and practiced a semi-sedentary lifeway, then our argument should be with how these bands acquired this lifeway and how long it was practiced prior to the nineteenth century.

Traditional historians and anthropologists have held that the Sioux migrated from the eastern woodlands/forest-prairie border of Minnesota on to the Northern Plains ca. 1650-1700 because of pressures resulting from Euroamerican settlement further east (e.g., Hyde 1937). Recent reevaluations of historical and archeological evidence indicates that at

least segments of the group referred to as the Sioux were utilizing Plains resources prior to the time of this migration (Wood 1985; Michlovic 1985).

In reference to the interrelationships between groups residing in the forest-prairie border and Plains groups, Wood (1985:3-4) states:

> The similarities between the Biesterfeldt site, believed to be of Cheyenne Indian origin, and the village cultures along the Missouri River also intimate close ties between these areas on the protohistoric level, as does the Hintz site, on the James River, whose closest ties seem to be with the Hidatsa (Wheeler 1963). Furthermore, Sonota Complex burial mounds of the Middle Woodland period, as well as linear mound groups of uncertain prehistoric age, occur both along the Sheyenne and other rivers in eastern North Dakota and along the Missouri River to the west (Hewes 1949; Neuman 1975; Chomko and Wood 1973). It therefore seems obvious that the relationships between the Northern Plains and the Northeastern Plains were intimate from at least Late Woodland times to the full historic period.

The John K. Bear winter count would seem to indicate the same type of interaction for the Lower Yanktonai. Covering the period from 1682-1883, the winter count documents Lower Yanktonai movement between the Northern and Northeastern Plains. An incomplete list of points mentioned in the count include Canton, South Dakota, the Blue Earth River, the Loup Fork of the Platte, the Missouri River, Cherry Valley (a place between McLaughlin and Mobridge, South Dakota) and the James River (Howard 1976).

Evidence derived from archeological work in the Red River valley may also substantiate this position. Michlovic (1985) argues that Sandy Lake pottery is connected with early Dakota populations. More recently, Michlovic (1986) has suggested that the Shea site (dated A.D. 1498), a fortified village located in eastern North Dakota, may be affiliated with Dakota populations.

If Sandy Lake pottery is associated with Dakota occupation this would considerably extend the known period of their use of both the Northern Plains and the Northeastern Plains. Another such relationship with the Dakota as a possible ethnic affiliation is suggested for the Devils Lake - Sourisford Burial Complex by Syms (1979).

Extending the knowledge of Sioux occupation back in time does not eliminate the possibility that they acquired the earthlodge and horticulture through diffusion. Cultural interaction took place and, along with the trade of material culture, transmittal of ideas must have also occurred. However, without the imposition of the theoretical restrictions of a great Sioux migration out on to the plains, it not only seems possible, but also logical that the use of the earthlodge and horticulture were adaptations to changing conditions within an already occupied niche.

CHAPTER FIVE
HISTORICAL OVERVIEW*

Kurt P. Schweigert and Dori M. Penny

Early Exploration

In 1731 Pierre Gaultier de Varennes, Sieur de La Verendrye, began a search for an overland route from the Great Lakes to the Pacific. La Verendrye had been granted permission by Louis XV of France, then ruler of Canada, to conduct the expedition at his own expense. In return, La Verendrye was granted a monopoly of the fur trade that might develop as a result of his expeditions. He received financial support for his expeditions from Montreal merchants eager to become part of the resulting fur trade monopoly. La Verendrye established forts and trading posts from Lake Superior to Lake of the Woods, Lake Winnipeg, and on the Red and Assiniboine Rivers (Burpee 1927).

In 1738 La Verendrye built Fort la Reine at the point where an established trail crossed the Assiniboine River. This trail had apparently developed as a trade route by which the Missouri Valley tribes and the Assiniboine journeyed north to meet Cree traders. La Verendrye had received reports that a tribe of light-skinned Indians lived on a westward flowing river and in 1738 he departed Fort La Reine in the company of his two sons and twenty-two other men (Smith 1980:37,43). The route followed by the party has remained a matter of conjecture, but it is known that he reached the Missouri River on November 28th, 1738.

The La Verendrye party stayed at the Missouri River villages until December, 1738 before returning to Fort la Reine (Smith 1980:98). Two of La Verendrye's men had been left behind to learn the Mantannes (Mandan) language and garner what information they could (Smith 1980:98). These men returned in September of 1739 (Smith 1980:98). The news of Indians from the Spanish controlled area of North America trading with the Mandan prompted La Verendrye to send his sons back to this area (Smith 1980:98-107). "In 1742, one of La Verendrye's sons, Pierre returned to the Mandan villages but left no aid in determining their location" (Chomko and Wood 1983:43). In 1743 two of La Verendrye's sons journeyed to the Missouri River villages and traveled far to the west and south, into present day South Dakota and probably Wyoming. The failure of these expeditions to locate the western sea did not detract from their importance to the Montreal-based fur trade, which would monopolize the Assiniboine-Souris-Missouri River area until the 1780s (Burpee 1927; Reid 1965; Libby 1916).

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* Editor's note: This chapter is a condensed and updated version of a previously published document (Schweigert 1983b). The shorter version presented here reflects the fact that the 1984 inventory deals only with the right bank of Lake Oahe.

The Montreal based trade with the Missouri River tribes appears to have been dormant in the period 1738 to 1770, probably due to a depressed economy in New France caused by almost continuous war between France, Spain and England during that period. By the early 1770s, however, Montreal-based British traders had begun visiting the Mandan villages on a regular basis (Gates 1933:39,51).

The profitability of the Missouri village trade probably tapered off rapidly after the establishment of competition for the furs. The North West Company apparently maintained a virtual monopoly of this trade from 1783 to 1793, but by 1805 that company had abandoned attempts to organize the Missouri River trade in its favor. Although British trading would continue at the Missouri villages until 1821, that trade was incidental to the interests of the major fur companies.

The British presence on the Missouri alarmed the Spanish, who in 1794, organized the Missouri Company at St. Louis to open Spanish trade and quell the British influence. Backed by the Missouri Company, Jean Baptiste Trudeau formed an expedition to build a fort among the Mandan and to determine the distance to the Rocky Mountains. Trudeau's expedition only reached the mouth of the Grand River in 1795 and returned to St. Louis without locating the Mandan villages.

In the fall of 1796 another Missouri Company expedition, led by John Evans, reached the Mandan villages and forbade them trade with the British. The Spanish authority at St. Louis was to remote for maintenance of sovereignty on the Upper Missouri and the existing trade relations with the British were strong. The Spanish traders fell into disfavor and the Indians continued to trade with the British companies (Robinson 1966:36-38).

The Missouri River drainage remained the property of Spain until ceded back to France in 1800. In 1803 France sold the Missouri River drainage to the United States as part of the Louisiana purchase. In January 1803, President Jefferson, anticipating this purchase, proposed a scientific expedition to the western ocean:

> While other civilized nations have encountered great expense to enlarge the boundaries of knowlege by undertaking voyages of discovery for other literary purposes, in various parts and directions, our nation seems to owe to the same object as well as to its own interests, to explore this, the only line of easy communications across the continent [Eide 1969:2].

Thus was the Lewis and Clark Expedition set in motion, at a time prior to this nation's acquisition of the territory which the expedition was to explore. The Louisiana Purchase in effect legitimized the true purpose of the expedition (Eide 1969:3-8).

The expedition assembled and wintered near the mouth of Wood River in Illinois, opposite the mouth of the Missouri. The group began its journey up the Missouri at 4:00 p.m. on Monday, May 14, 1804. Lewis and Clark reached what is now North Dakota on October 14, 1804. Between then and October 18 the explorers camped at three locations on the right bank of the Missouri River in or immediately adjacent to the project area. These are

the October 16th, October 17th and October 18th campsites (Mattison 1953:9-10). All three of these campsites are presumed to be either destroyed or inundated. On the return trip in 1806, the expedition camped along the left bank of the river, opposite the study area, on August 18 and 19. Both of these campsites are presumed to be either destroyed or inundated. (Mattison 1953: 10-11).

In 1825 an expedition under General Atkinson, accompanied by Benjamin O'Fallon, Indian Agent, headed north from Council Bluffs in eight keelboats of unique propulsion. The boats were equipped with paddle wheels which were turned by hand by the soldiers (Chittenden 1962:383). Treaties were signed with sixteen tribes from Council Bluffs to the Knife River. Atkinson reported on his return that he found no British influence and that no fort was required above Council Bluffs. While occasional hostilities were to continue for another fifteen years, the Upper Missouri had, at least in part, been opened to the American fur trade (Robinson 1966:85; Dunn 1963:179).

The dominant trading firm of the United States was the American Fur Company, chartered in New York by John Jacob Astor in 1808 with a capital of a million dollars. The Company the foundation for the great Astor fortune, the largest in the nation at his death in 1848. In 1822, the Western Department was organized in St. Louis, and in 1827 Astor entered a partnership with Bernard Pratte and Company. The Company furnished the goods and marketed the furs and Pratte supervised the actual trade. Profits and losses were to be shared equally. For the following forty years the company, be it the American Fur Company or its successors, Pratte, Chouteau and Company, or Pierre Chouteau, Jr., and Company, would hold nearly complete control of all trade on the Upper Missouri River (Robinson 1966:86-87).

By 1838 the best years had passed for the American fur trade in the region. The streams of the Northern Plains had been profitably and destructively exploited. Accumulating suitable quantities of pelts became difficult, at best, and the buffalo robe trade had not yet begun. After the Arikara moved from the Grand and Heart rivers, the Missouri Valley in the vicinity of the study area was left to the Sioux who were neither accustomed to trapping nor particularly friendly toward Euroamericans.

Two temporary trading posts may have been established in the vicinity of the project area, but solid evidence for the locations, nature and dates of these establishments has not been found. Hiram Chittenden indicated "Mitchell's Post" on the west side of the Missouri several miles north of the Cannonball River, and "Bouis Post" opposite and just above the mouth of the Cannonball. These two posts may have been in opposition to each other, but unfortunately Chittenden does not mention either of these in the text or appendices of his work (Chittenden 1902). He does mention an American Fur Company trader named Bois who was active at Fort Pierre in 1842 (Chittenden 1902:371). Around that date the Fox, Livingston Company was opposing the American Fur Company at many locations on the Missouri River, and it is possible that Bois and Mitchell operated their namesake posts for these opposing companies.

Gouveneur K. Warren of the Topographic Engineers noted an "Old T.H." just above the mouth of Long Lake Creek (Badger Creek) on an official 1856

map. Several popular maps of the years 1865 to 1879 apparently borrowed heavily from Warren's military map, but the location of the old trading house is shown variously as to the south of the mouth of Badger Creek and on the west side of the Missouri opposite the mouth of the creek. "Mitchell's Post" is indicated on only Chittenden's map. Neither post is indicated on General Land Office plats or other survey plats of the Missouri River (Warren 1875; Pettermann 1879; Mitchell 1871). One secondary source for the area states that a Samuel E. McElry had a trading post just above the mouth of Badger Creek in 1863-1864, but that it was abandoned after being flooded in the spring of 1864 (Emmons County Historical Society 1974).

The Indian Wars Era

At the Laramie Treaty in 1851, the Northern Plains tribes agreed to allow emigrants travel on the Oregon Trail through Nebraska and Wyoming. To aid in policing the Plains, the army bought Fort Pierre from the American Fur Company in 1855 and platted Fort Randall farther downstream in 1856. With the settlement of Iowa and southern Minnesota, white interest in southeastern Dakota increased and in 1858 the Yankton ceded fourteen million acres in what is now southeastern South Dakota. Settlements sprang up at Yankton, Sioux Falls and Vermillion, and Dakota Territory was organized to include all of present North Dakota and South Dakota, most of Montana, and about the northern sixty percent of Wyoming (Robinson 1966:98-99).

Santee Sioux attacks along the Minnesota River resulted in the Sibley and Sully military campaigns of 1863 and 1864. Because these campaigns either crossed or came quite near to the present project area, it is of importance to briefly discuss the events.

In the summer of 1863 Sibley was to advance toward the Missouri from Minnesota with a force of 2,800 men while Sully with 2,000 men was to come up the Missouri River to cut the Sioux off. Sibley fought the Sioux along a route north of present Interstate 94 with battles north of present Tappen, Dawson and Driscoll, North Dakota. Sully's upstream journey had been delayed by the low water and he had not reached the site of present Bismarck where the Sioux crossed the Missouri fleeing from Sibley. Sibley's troops were exhausted and did not pursue further. He estimated that 150 Indians and nine soldiers had been killed (Robinson 1966:100).

After Sibley's troops returned to Minnesota, the Sioux recrossed the Missouri River to hunt buffalo along the James River. Sully finally reached their camp south of present Merricourt in northwest Dickey County, North Dakota. The Indians offered some of their chiefs as hostages to demonstrate their good intentions, but Sully demanded unconditional surrender. The Sioux balked and started to abandon their camp and Sully's troops attacked. One hundred fifty Indians were killed and 156 were taken prisoner. Three hundred lodges and nearly half a million pounds of buffalo meat were burned, and the Indians' horses were shot (Robinson 1966:101). Sully lost twenty of his troops (Robinson 1966:100-101).

The next year, 1864, Sully ascended the Missouri River with 2,500 men. After building Fort Rice above the mouth of the Cannonball on the west bank

of the Missouri, Sully's forces marched west and found Sioux encamped in the Killdeer Mountains of present Dunn County, North Dakota (Mattison 1954:3-4). These were Teton and Yanktonai who were not involved in the hostilites in Minnesota.

Sulley's artillery broke up the camp and his men destroyed the abandoned property, but were unable to successfully pursue the Indians in the rough, broken territory. Sully led a grueling march through the badlands periodically engaging in fighting with the Sioux. At the Yellowstone River, Sully and his men were met by steamboats and returned downstream, leaving small detachments of soldiers at Fort Union and Fort Berthold (Robinson 1966:101).

Besides Fort Rice, several locales relating to these campaigns are known to be present in the general vicinity of the project area. Sibley's attack on the 1863 Sioux crossing of the Missouri River was marked by a gravestone as late as 1936. The location of Sibley's "Camp Slaughter" of 1863 is also known.

The establishment of Fort Rice grew out of the government's realization that a permanent military force would be necessary to contain hostile Indians and protect overland and Missouri River transportation routes. General Sully had been ordered to build the post near Long Lake, probably due to an error in then-existing maps. Because he found no suitable spot there, he returned to the Missouri River and chose a site on the west bank which offered relatively high ground immediately above the river, good grazing, and timber. The site was six miles above the mouth of the Cannonball River, across the river from the abandoned McElry trading post. The presence of Fort Rice at first seemed to increase the hostility of the Sioux, and attacks on lone mail carriers, steamboats and woodcutters continued to increase after 1864. Between October 1864 and May 1865 six companies of the First United States Volunteers, comprised mostly of former Confederate prisoners of war, were stationed at Fort Rice. During that period 81 men died, only eight of whom were killed by Indians, while 37 died of scurvy (Mattison 1953:180).

Fort Rice was originally built of logs and laid out in the traditional military plan with buildings arranged around a rectangular parade ground. The fort was enclosed with a log palisade, which had blockhouses at the northeast and southwest corners. By 1868 the log buildings had deteriorated and had become too small for the fort population; in that year frame buildings were constructed within the log palisade to replace the original buildings. In succeeding years other structures were built outside the palisade, including three ice houses on the river terrace edge and a square corral enclosed by stables, a granary, and stockhouses (U.S. Department of War 1875:421-425; Mattison 1953:87-108). The State Historical Society of North Dakota purchased the actual fort and some of the surrounding area in 1913 and 1936, and has preserved the site as a State Historic Site since that time. Some areas which once contained ancillary structures are on Corps of Engineers property but were not within this survey (see Larson et al. 1983).

Beginning in 1865, the United States government attempted to forge treaties with the tribes of the Central and Northern Plains. Treaty negotiations were held at Fort Rice with the Sioux in 1866, 1867 and 1868.

Although some Sioux leaders refused to attend the 1868 meetings, many of the bands accepted the provisions of the Fort Laramie Treaty of that year. In exchange for annuities, closing of the Bozeman Trail, and other services, the Plains tribes for the first time accepted reservation areas and agreed to allow construction of a railroad through the region (Mattison 1953:182).

In 1871, surveys for a route for the Northern Pacific Railroad reached the Missouri River at Edwinton (Bismarck), and in that year and the following two years surveys extended from Edwinton (Bismarck) into the Yellowstone Valley in Montana. The latter surveys were led by General Stanley and Colonel Whistler, and large military escorts were provided to the survey crews in part from the garrison at Fort Rice. The fort also served as the provisioning depot and assembly point for these expeditions (Mattison 1953:182-184).

On June 14, 1872, a temporary military camp was established near the projected rail line on the west side of the Missouri River and on August 15, 1872, the camp was moved downstream and named Fort McKean. In November of the same year the post name was changed to Fort Abraham Lincoln, and the original infantry detachment was joined by a large force of cavalry (Carroll and Frost 1976:3; Robinson 1966:102, 127). Fort Abraham Lincoln quickly supplanted Fort Rice as the most important military post in the Northern Plains. In part this was because it could be supplied not only by steamboat but also by railroad. The railroad would not be built into the area west of the Missouri until 1879, but in that time Fort Abraham Lincoln would play a central role in the development of the American West.

Colonel George Armstrong Custer assumed nominal command of Fort Abraham Lincoln in 1873. In the summer of 1874 Custer led a large "mapping" expedition, including four companies from Fort Rice, to the Black Hills of South Dakota. Gold was discovered there in paying quantities by miners with the party. News of the discoveries reached the booming railroad town of Cheyenne, Wyoming almost immediately and a considerable prospecting rush began. The Black Hills were sacred to the Sioux and Cheyenne Indians, but had been guaranteed to the Sioux by the 1868 Fort Laramie Treaty. The Army removed several groups of prospectors from the Black Hills in 1874, but by mid-summer of 1875 hundreds of miners were prospecting there. Indians and whites made numerous attacks on each other during that summer, both in the Black Hills and to the south. Faced with massive public pressure and increasing violence, the government demanded that all Sioux present themselves at the agencies on the Missouri River in November 1875 or be considered hostile. Many bands could not be contacted before the deadline, especially those who were engaged in traditional bison hunting in what would become northern Wyoming and Montana.

Many Sioux and Cheyenne who went to the agencies found short rations, virtually no game, and mounting apprehensions that the Army would confiscate their horses and firearms. Throughout the winter and into the spring of 1876, groups of Sioux left the agencies to join the "hostiles" in the best remaining hunting territory near the Bighorn River. In May 1876, the United States Army began a campaign against the Sioux and other non-agency Indians who were reported to have met in a grand encampment near the mouth of the Little Big Horn River. Two companies of the Seventh Cavalry from Fort Rice took part in this campaign. Although the major battle ended

rather surprisingly for Custer and his immediate command, the hostile Indians were hounded by the army until they either surrendered or, like Sitting Bull, escaped to Canada (Hanson 1909:290-376; Robinson 1966:178).

Many of the Sioux who escaped to Canada had formerly lived near the confluence of the Grand River and Missouri, and northward into the Oahe area of North Dakota. Under provisions of the 1868 treaty an Indian agency was operated on the Grand River which principally served as a distribution point for annuities and an intelligence gathering point for the government. In July 1873, Major Palmer, the Indian Agent at Grand River, was given orders to build an agency on a new site. Palmer selected a site 32 miles south of Fort Rice. The post was named Standing Rock Agency for a nearby stone prominent in Sioux and Arikara mythology (Mattison 1953:159-160).

The military contingent which had been stationed at the Grand River Agency was transferred to Standing Rock Agency, and Grand River became a sub-agency. With military posts at Standing Rock and Fort Abraham Lincoln, the need for Fort Rice diminished and it was abandoned in early 1878. In accordance with General Order No. 9, the name of the garrison at Standing Rock Agency became Fort Yates on December 30, 1878. The new fort was named for Captain George W. Yates of the Seventh Cavalry, who died in the Battle of the Little Big Horn. After 1880 Fort Yates would be one of the largest military posts on the Northern Plains.

Starvation and a desire to return home led Sitting Bull and his followers to surrender at Fort Buford, Dakota Territory, in 1881. These Indians were sent to Fort Yates and eventually they were settled at Standing Rock and Grand River. Fort Yates was the last of the Indian wars forts to be abandoned in North Dakota when it was closed in 1903 (Mattison 1953:166; Robinson 1966:178).

The Reservation Era

The Fort Laramie Treaty of 1868 established the Great Sioux Reservation; it was the twenty-sixth treaty with the Sioux between 1815 and 1868, but the first to actually guarantee land rights to the western Sioux. The treaty defined occupation areas for each band and tribe, and further defined extra-reservation hunting rights in huge areas. The Upper and Lower Yanktonai, Hunkpapa, and Blackfeet bands of the Sioux claimed occupation of that area that would become Standing Rock Reservation (Milligan 1976:6-11).

Changes in the size of their reservation took place frequently between 1868 and 1908. "In August, 1879, the government reduced the size of the Great Sioux Reservation taking away more than 5,000,000 acres of land east of the Missouri, mostly in South Dakota" (Robinson 1966:181). Although some of the Indians apparently believed the northern limit of the reservations to be the Heart River, the boundary was actually some distance to the south of the Cannonball River (Schweigert 1983b:79). The boundary was later changed by Executive Order to be the Cannonball to increase the distance between the major settlement around the agency and liquor salesmen operating at the edge of the reservation. Contact with liquor salesmen also resulted in an Executive Order of July 13, 1880, which prohibited the Yanktonai from legally living anywhere east of the Missouri River in North

Dakota. In 1889, 11,000,000 acres were taken from the Sioux and the Great Sioux Reservation was broken into six separate reservations, of which Standing Rock was the largest (Robinson 1966:181). The Standing Rock Sioux Reservation was defined as an area of 2,462,000 acres in North and South Dakota (Robinson 1966:118). Of this number only 665,000 acres were located in North Dakota (Robinson 1966:118). This brought about fundamental changes in the way bands perceived themselves and were perceived by others. "The establishment of separate reservations blurred long standing tribal distinctions. The old subtribal designations gradually became obsolete, and tribal members soon began to identify themselves according to their reservations" (Lawson 1982:32).

The Fort Laramie Treaty of 1868 and the Dawes Severalty Act of 1887 provided for patent of lands on the reservation to individuals who would take up agricultural subsistence. The Dawes Severalty Act provided 160 acres for each individual. Unlike the Homestead Act, the land was held in trust by the United States Government for the individual. By 1874 about 800 people were engaged in raising crops on 800 acres in all areas served by the Standing Rock Agency. In that year 1,280 bushels of corn were harvested. The Indians also owned 3,000 horses, 9 mules, and 148 head of cattle (U.S. Commissioner of Indian Affairs 1874:116). The large number of horses and so few cattle would seem to illustrate their dependence on hunting for subsistence at that date.

Most of the planted acreage was within the floodplain on the Grand River some distance from the Subagency. In late 1874, the Secretary of the Interior issued an order that all Indians must live within 15 miles of an agency. That order caused the abandonment of most of the cultivated lands on Grand River and further discouraged the Sioux from settling down on the reservation. In the following years the agricultural base at Standing Rock would diminish significantly because lands near the agency and the subagencies that were conducive to large-scale farming were limited, and because many former residents of Grand River would leave to join Sitting Bull in hunting areas to the west (U.S. Commissioner of Indian Affairs 1874, 1875, 1876).

The total land under cultivation did not exceed the 1874 level until 1880 when 1,142 acres were planted in individual tracts an another 267 acres were planted in three common fields by 180 Indians (Schweigert 1983b:81). The agent also hired Indian employees to plant 300 acres of wheat for the agency bakery and to serve as an example to the other Indians (Schweigert 1983b:81). By 1880, however, other sources of income were available to residents of the Standing Rock Agency. All timber had been cut within five miles of the agency, and Indians and white contractors were hired to haul fuel to the agency and Fort Yates (Schweigert 1983b:81). The agency and military garrison also had large herds of horses and cattle, and in that year Indians cut 2,069 tons of hay for winter feed (U.S. Commissioner of Indian Affairs 1880; Milligan 1976:96,98). By 1881, 284 families had selected individual fields on the reservation, and 243 families were living in log houses built by government employees (Robinson 1966:180; Schweigert 1983b:81). Most Indians who had not chosen to plant individual fields by that time were planting crops in two large common fields.

In July 1881, Sitting Bull's band surrendered at Fort Buford and were brought to Standing Rock. Sitting Bull himself would remain under arrest at Fort Randall until 1883, but the arrival of his followers encouraged a movement toward revival of traditional tribal organization and religion that would end in 1890 with Sitting Bull's death and the Wounded Knee Massacre. Many of these individuals settled near the Standing Rock Agency, but most returned to the Grand River area (U.S. Commission of Indian Affairs 1881, 1882, 1883).

In 1889 when the Standing Rock Reservation was officially separated from the Great Sioux Reservation, the population had reached 3,775 persons and was increasing (Schweigert 1983b:81). The next year 4,472 persons were counted on Standing Rock and nearly 1,400 acres were planted (Schweigert 1983b:81).

Conditions on the reservation were depressing: virtually all of the Indians depended on government rations for their main livelihood and disease was rampant. In 1881 there were 111 deaths and only 105 births reported for the reservations (Robinson 1966:179). An estimated 2,000 cases of tuberculosis affected half of the reservation population (Milligan 1976:101-104). The net increase in population resulted from movement from Indians to Standing Rock from agencies and reservations where conditions were worse.

Alternatives to reservation life had ceased to exist for the Sioux by 1882. In that year Agent James McLaughlin received permission to accompany a general bison hunt by residents of Standing Rock, in areas far to the west of the reservation (Schweigert 1983b:82). Although a large number of bison were killed during that hunt, the herds were gone forever and only a few animals would be found by commerical hunters in 1883. Euroamerican settlement had begun along the east side of the Missouri and on drainages to the west of the river. Homestead settlement spread with the building of the Northern Pacific Railroad to Bismarck in 1873, and westward in 1879-80. In 1886 a railroad company proposed to build a railroad from a point ten miles south of Fort Yates to the Black Hills, but the Indians resoundingly rejected permission for the project (Milligan 1976:116,118).

The lands of the Standing Rock Reservation were well suited for stock range, and several Euroamericans developed large ranches on the edge of the reservation and leased non-allotted Indian lands after 1880. The range stock industry has remained the most viable economic activity from that date to present, but the nature of that industry changed with the opening of the non-alloted lands to general entry. On February 10, 1890, President Benjamin Harrison proclaimed acceptance of legislation by Congress to return about half of the lands on the Standing Rock Reservation to the public domain. Those "excess" lands were opened to general entry on a lottery basis in 1908, which brought a virtual land rush to the area (Great Sioux Reservation Information Bureau 1908).

Transportation

The Missouri River was the artery of commerce for the fur trade of the entire region. Until 1832 the great bulk of the trade goods were moved up

the river from St. Louis on keelboats which were poled, rowed, pulled, or sailed up the river depending on the conditions at any particular time and location. The furs and hides received in the trade were returned downstream by the same vessels and by Mackinaws constructed at the posts. The Mackinaw was inexpensive, easy to build, and generally carried a greater cargo than the keelboat, but was good only for downstream travel (Robinson 1966:90; Lass 1962:90-109). Canoes or pirogues, which were essentially canoes with a squared stern, were used for sending messages and small items between posts (Lass 1962:91-94).

A tremendous change in transportation on the Upper Missouri occurred in 1832. After the disasters that befell the Atkinson expedition steamboats in 1819, it was generally assumed that use of such boats was impractical above Council Bluffs. Frustrated by the inability to move merchandise by keelboat in the quantity and with the speed desired, the American Fur Company had for several years considered developing a special craft for the Upper Missouri navigation. Finally construction of a small, broad beamed steamer of shallow draft was commissioned. In 1831 that boat, the Yellowstone, ascended the river as far as Fort Pierre, and in 1832 it reached Fort Union, opening the upper river to comparatively rapid and dependable transportation for the first time.

The steamboat was destined to be the principal means of freight hauling throughout the valley from 1832 until the arrival of the Northern Pacific Railroad at Bismarck in 1873. It remained important to the region until the arrival of a railroad branch line in the following century.

Although steamboats had little to do with permanent settlement in most of North Dakota, they were a factor in the early settlement of the Oahe area because the boats were the primary means of commercial transportation until 1914.

A number of sunken steamboats and steamboat wrecks are recorded along the Missouri from Bismarck to the South Dakota line (e.g., the Assiniboine, Robinson 1966:94). All of the sunken steamboats and steamboat wrecks were in the Missouri River channel and are therefore relatively far removed from the project area.

By the 1860s, the trading posts and stores had become more general merchandise houses than fur trading establishments. Rather than trading for furs, they were selling goods to the military, the Indian agencies, and the travelers on the river. In 1864 Pierre Chouteau, Jr., suspected by the U. S. Government of being a Confederate sympathizer, lost his license to trade on the Missouri. He sold out most of his remaining posts to Hubbel and Hawley, who operated under the name of Northwestern Fur Company. Hubbel and Hawley, headquartered in St. Paul, Durfee and Peck in Sioux City, and I.G. Baker of Fort Benton controlled the upper river trade until its end. No longer simply merchandisers, they all operated their own transportation companies and owned or leased their own steamboats (Robinson 1966:106-107). By 1873 the character of the trading companies had changed; they were primarily transportation and steamboat operators rather than fur traders. Regardless of where their companies were headquartered, they basically operated out of three points: Yankton and Bismarck in Dakota Territory, and Fort Benton in Montana Territory (Robinson 1966:107; Lass 1962:89-104).

The arrival and departure of 172 vessels were reported at Bismarck during the summer of 1880. With that kind of volume on the Missouri, it is no wonder that woodyards became numerous and important, and in some cases resulted in the establishment of small settlements in the vicinity of these fuel depots (Lass 1962:130-136; Williams 1961:187-188).

One such woodhawk was Andy Marsh who started a woodyard in Emmons County in 1872. Marsh also provided a ferry crossing of the river near his woodyard. Another woodhawk, James B. Gayton, came to North Dakota in 1868 and became a commissary clerk at Fort Rice. By 1874 he operated a woodyard in partnership with Andy Marsh. Gayton operated another woodyard below the mouth of Cattail Creek and later one on Horsehead Flat. In 1883 he had a trading store in the latter vicinity and the nearby townsite of Gayton was named for him. Another woodhawk, Mull Huran, ran a woodyard four miles below Fort Rice. Woodhawks apparently sold more than wood. Andy Marsh and Tom Foley were ordered to stop selling whiskey on the east side of the river by Indian Agent Palmer in 1875. They ignored the order, as did the Kelly brothers who set up shop directly across from the agency (History of North Dakota Grazing File n.d.a:6; Weeden n.d.:24, 36; Milligan 1976:26-27).

By 1880, the "Indian problem" had been resolved and the military presence greatly reduced, which correspondingly reduced the highly profitable military trade of the steamboat transportation companies. The Northern Pacific Railroad had completed a line from Duluth, Minnesota to Bismarck, North Dakota on June 3, 1873 and in 1879 began pushing westward (Robinson 1966:127, 184). After 1883, Bismarck was the only port that could readily serve the remaining area not already provided with railroads. In 1885 what had long been the largest shipping company on the Upper Missouri, the Coulson line, quit the business. Thereafter, the bulk of boats handling freight belonged to the Fort Benton Transportation Company, an organization owned largely by Fort Benton merchants, incorporated in Iowa, but with operating headquarters in Bismarck (Lass 1962:101-102, 137).

After 1885 the Upper Missouri steamboat trade was mostly of a local nature, with the exception of 1887 when a brief boom occurred that was to be responsible for the end of the steamboat era. This boom was caused by the record breaking construction of the St. Paul, Minneapolis, and Manitoba Railway (soon to become the Great Northern) line from Minot to Great Falls. While the season offered a great deal of work and profits to the steamboat lines hauling construction supplies from Bismarck to points such as Williston and Fort Benton, the completion of the railroad to Great Falls that year marked the finale for long haul steamboat transportation on the upper river (Lass 1962:154-157).

By 1895 the river traffic out of Bismarck was confined to the area from Fort Yates to Williston, and the Fort Benton Transportation company operated only two boats, the Rosebud and the F. Y. Batchelor.

While river and rail travel carried freight and prospectors to major settlements, the overland stage coaches and freight wagons allowed access to those regions not served by boat or train. In 1877 the Northern Pacific Railroad, Minnesota Stage Company, N. P. Clark of St. Cloud, and Peter Steims and his associates formed the Northwestern Express and

Transportation Company (known as the E. T. Company) to transport freight and passengers from Bismarck to Deadwood, South Dakota, in the heart of the Black Hills gold fields. This company bought horses, mules and wagons and built quarters for their men along the 210 mile route. The first stages left Bismarck on April 11, 1877. In 1880 the Chicago and Northwestern Railroad reached Pierre, South Dakota, and the E. T. Company sold out and moved to Pierre (Larson 1931:60). The Bismarck to Deadwood Trail was located to the west of the project area.

Other regions, did not receive rail service for many years and stage lines were an essential link to trade and communication centers. Daily stages ran from Bismarck to Winona and Fort Yates. Charles Copitz ran this line, and his drivers were John Eastwood and LaBrock. The route was only passable during the dry months. The first stop was five miles south of Bismarck at the small village of Stewartsdale, which included a grain elevator, stockyards and a church. The next stop was Glenco where the stage was ferried across the river to Huff and Fort Rice, then ferried back to Glenco. After the Glenco stop, the stage continued to Livonia where mail was distributed at the Baker post office. The fourth stop was at the Casey post office at Gayton. The remaining stops were at the Hampton and Emmonsburg post offices, with the stage ending the days' journey at Winona. At Winona the stage was ferried across the river to Fort Yates. The following day the route was reversed (Sprunk 1976:8; Oder 1976:24). These stages operated during daylight hours, weather permitting, and changed their routes to adapt to changes in the locations of post offices.

The half-way house for a stage line operating between Mandan and Fort Yates was located at the ranch headquarters of Henry S. Parkin. Noted visitors to this stopping place include the Bishop of Canterbury of England, Duke Boris of Russia, Major James McLaughlin, Sitting Bull and "Buffalo Bill" Cody. A telegraph station on the line from Fort Yates to Fort Lincoln was also located at the ranch headquarters (called the Cannonball Ranch; currently owned by John F. Sullivan III). This ranch is located immediately west of the project area.

Most communities on the river had ferries to allow crossing. The Winona-Fort Yates ferry was operated by Andy Marsh. Marsh lost his license and the ferry crossing was operated by H. M. Douglas in 1884. The following year Marsh regained his license from Douglas. Fred Carrow operated a ferry on Big Beaver Creek until 1884, when H. A. Archambault took over the operation. John Leach operated a ferry on the Cannonball in 1895.

Euroamerican Settlement

The first Euroamerican settlers to the region, other than fur traders, military men and woodhawks, were the open range ranchers. One of the first ranchers in the project area was Henry S. Parkin. Parkin came west from Pennsylvania in about 1873 and by 1876 had established his headquarters on the Cannonball River (see above, Cannonball Ranch). His brother, Walter S. Parkin, in partnership with Mandan meat retailer, W. C. Badger, operated the Horsehead Ranch in Emmons County. During the summer months their cattle fed on the "free range" in Sioux County, then in January they were herded across the frozen Missouri River to the Badger-Parkin corral. There

the cattle were protected from the harsh northern winds in the timbered floodplain until March, when they were driven back to Sioux County (History of North Dakota Grazing Files n.d.b:1; Mattison 1953:177; Fristad 1970:47). The Parkin Ranch was also the half-way house for a stage line operating between Mandan and Fort Yates. The Parkin Ranch was later acquired by John F. Sullivan, a prominent Mandan attorney.

Don Stevens, another well-known rancher also worked as a freighter and delivered feed supplies to army posts including Fort Rice, Fort Ransom, Fort Lincoln, Fort Yates, Fort Stevenson, Fort Custer and Fort Buford. His ranch, the Cannonball (not the same as the Parkin/Cannonball Ranch), was in operation by 1885 and was located well west of the project area at the point where the Bismarck-Deadwood stage crossed the Cannonball River (History of North Dakota Grazing Files n.d.b:13; Robinson 1966:89).

Many factors contributed to the influx of homesteads in the early 1880s, commonly called the "Great Dakota Boom." Steamboat and rail transportation had made the area easily accessible, the "Indian problem" had been resolved, and the land was either free or inexpensive. Settlers who selected non-railroad grant lands could homestead on 160 acres for filing and proof fees amounting to $16.00. The Northern Pacific, which had been given large land grants by the federal government, sold land to settlers at $2.40 an acres and up. Typically, the sizes of the homesteads were small. The type of structures the settlers constructed varied according to available materials and ethnic preferences. On the timbered river bottoms, log structures were common, while on the rolling plains, structures were built of milled lumber or earth, often banked into a hillside. Where few construction materials were available from nature, lumber was hauled in by railroad and freight wagon (Woods and Wenzel 1976a:16).

Hekton, a small community, was established in the late 1880s on the south bank of the Cannonball. During the nineteenth century the population consisted mostly of Indians and the community was centered around the subagency post. Hekton was the name given to the settlement and post office established there by Rich M. Johnson and the site was said to be the location of an earlier village of the same name. The name Hekton was derived from the Sioux word "Hecta," which means "set back" or "away from," a reference the distance of the village from the Missouri River. The Cannonball post office was moved and in 1915 the residents of Hekton changed the name of their village to Cannonball (Williams 1961:186).

Early farmers of the region suffered the hardships of adapting to new environmental, economic and social pressures. Many of the small homesteads could not sustain a family and often these settlers sold their land and moved on to homestead in a less hostile environment. Those settlers who could afford to buy out the less fortunate were able to increase their lands to a supportable level. National economic declines and local climatic disasters in the 1890's dealt crushing blows to many settlers and discouraged would-be settlers from coming to the region (Robinson 1981:15).

The village of Fort Rice was platted in 1909 about one mile north of the old fort site. Originally called Gwyther after the former owner of the site, Robert Gwyther, the village quickly became a minor trade center for the area. By 1916 the town contained a general store and post office, at

least one lumber yard, two other general merchandise stores, two hardware stores, a bank, a jewelry store, a butcher shop, and a grain elevator. The town reached its zenith about 1920 with a population of over 300, but began to decline rapidly after that date. Many of the original buildings of the townsite were destroyed in a tornado on May 29, 1953.

In the first decade of the twentieth century many of these discouraging elements eased. Railroads began to expand and build branch lines to smaller communities. A new milling process and the creation of an increased food market stimulated by the industrial advance in the East favored the grains grown on the Northern Plains, and encouraging climatic conditions all contributed to a new surge in settlement in North Dakota. By 1910 the Northern Pacific had begun to extend their track down the west bank of the Missouri, and on May 12, 1910, the townsite of Huff was platted at the location of the nineteenth siding. The town was named for John S. Huff who had homesteaded the land. Emmet W. Dobs became the postmaster of the new town (Williams 1961:199). Huff is located adjacent to the project area.

In the depression years of the 1920s and 1930s drought brought added difficulties to the farmers and ranchers of the region. Land and farm prices reflected the economic difficulties and resulted in many foreclosures on farm mortgages. From 1921 to 1934, probably one-third of North Dakota families lost their farms through foreclosures (Robinson 1966:400). Improved weather conditions and growing farm size eased many of these difficulties in later years. Although average farm size continued to grow slightly in the region, the rural economy and settlement population have been fairly stable since 1950. The Indians of the Standing Rock Reservation remain distinct from the general regional society, in part due to the continued existence of the reservation and its corresponding societal insulation, and in part due to a genuine desire of some Indians to maintain a separate identity and cultural patterns.

Impact of Oahe Dam

Vine Deloria, Jr. (1982:xi-xii) has written:

> There is something very sacred about the Missouri River to the Sioux Indians. Unlike traditions that extend far into the historical mists and are chronologically uncertain, our memories of the lands near the river are immediate and relate primarily to the last half of the nineteenth century when the tribe agreed to move to reservations....the families who took up allotments along the river bank retained many of their own ways until the Corps of Engineers confiscated their lands and built enormous dams, which flooded both ancestral farms and ranches and memories, leaving the tribes materially and spiritually impoverished.

The number of historical Euroamerican and Native American properties inundated as a result of the closure of Oahe Dam is an unknown, but presumably large, number. As Deloria (1982:xi-xii) points out, the loss to the inhabitants of the area is a loss of both material and spiritual consequence. However, the loss dealt with here is necessarily material.

Mattison (1953) recorded 17 historical sites on the right bank of the Missouri River between Bismarck, North Dakota and the South Dakota state line. Fourteen of these sites are in areas not included in the 1984 inventory. The remaining three are Lewis and Clark campsites, which are believed to be inundated or destroyed.

Mattison (1953) did not record any of the smaller ranching or farming operations, communities, allotments or homesteads within the area. It is likely that many of these sites did not fit Mattison's criteria as an historical resource.

The Document Search (Volume II, Appendix B) for the 1984 inventory indicates that 72 entries representing historic properties are inundated, 127 are off survey, 44 were not found, one entry is known to be an incorrect location and two entries represent locations that are either inundated or destroyed. Thirty-five entries represent 22 sites either located or relocated during the 1984 survey.

CHAPTER SIX
SITE DESCRIPTIONS

Dori M. Penny and Kurt P. Schweigert

Introduction

The descriptions contained in this chapter are intended to be brief summary statements concerning the cultural resources encountered during Larson-Tibesar Associates' 1984 inventory of the right bank of Lake Oahe between a point south of Bismarck in Morton County to the state boundary. Only those sites and isolated finds which were substantiated during field inspections are discussed in this chapter. Those sites which have been previously recorded or suggested to exist in the study area, but could not be located, are discussed in Chapter One and Appendix B.

The following discussions also contain brief statements, on a site-by-site basis, of National Register of Historic Places eligibility and recommendations for any further work believed necessary. Elevations listed for the sites and drainages are approximations based on contour lines provided on U.S.G.S. topographic maps. Maps of each site and illustrations of some diagnostic artifacts are included in this chapter. It should be noted that none of the isolated finds recorded are believed to be eligible for nomination to the National Register of Historic Places. A summary of recommendations for the cultural resources believed to be eligible for nomination to the National Register of Historic Places is given in Chapter Eight.

The descriptions have been partitioned into groups by the township and the range in which they occur. Within these groups the sites are listed in sequential order by their Smithsonian trinomial system site numbers. These are followed by descriptions of any isolated finds which occur in the group. In order to make it easier to find an individual description within this chapter, Table 6.1 presents an ordered listing, sorted by the ascending order of the site numbers, by county, and gives the page number where the description begins. The table concludes with a similar listing for isolated finds.

Historic Sites Recommendations

Recommendations consisting of the statement "This site should be evaluated to determine significance after development of a context for the evaluation...of reservation sites" were developed on the advice and suggestion of the North Dakota State Historical Society.

> In the absence of a "context" or even an overview statement pertaining to reservation life, it seems premature to assume nonsignificance for allotment homesteads in general, and particularly for such sites believed to have "...some value for comparative historical archaeological study." ...A more

Table 6.1. Cross reference chart for sites and isolated finds described in Chapter Six.

MORTON COUNTY SITES

Site Number	Page
32MO1	136
32MO16	167
32MO19	170
32MO20	173
32MO114	178
32MO115	178
32MO116	183
32MO117	153
32MO118	183
32MO119	186
32MO120	186
32MO121	157
32MO122	190
32MO123	192
32MO124	141
32MO125	144
32MO126	157
32MO127	160
32MO128	148
32MO129	167
32MO130	148
32MO131	162
32MO132	162
32MO133	153

SIOUX COUNTY SITES

Site Number	Page
32SI1	62
32SI3	63
32SI5	98
32SI13	114
32SI16	116
32SI30	119
32SI31	123
32SI32	126
32SI33	126
32SI34	93
32SI35	111
32SI36	103
32SI37	93
32SI38	96

Table 6.1 (cont.). Cross reference chart for sites and isolated finds described in Chapter Six.

SIOUX COUNTY SITES

ISOLATED FINDS

> appropriate evaluation might be "develop context for Reservation Life..." or "Evaluate again after context development." [Letter from Marty Perry including comments from Walter Bailey, North Dakota State Historical Society to Thomas K. Larson, dated June 13, 1986].

The historical overview presented as part of this report does not provide a context for the evaluation of reservation sites simply because the type of data required is not available without research that is considerably outside the scope of this contract.

It is generally acknowledged that historians have not sufficiently dealt with Native American history, much less the history of a specific reservation such as Standing Rock.

> This dearth of contemporary research, when coupled with the strong historiographical emphasis on nineteenth-century Indian affairs, has served both to distort the public image of Native Americans and their problems and to keep tribal members themselves ignorant of developments which impact drastically on their daily lives [Lawson 1982:xxiii].

In addition to the lack of historical research, no ethnoarcheological studies exist for reservations in North Dakota. If such studies existed, it might be possible to develop comparisons with what is known about a group of historic sites such as those recorded on the Standing Rock Reservation as part of this inventory.

Before a context can be developed, an understanding of the history of the residents of the reservation must be obtained. At this point, no data base or other type of source exists to provide an understanding of the personal, social and political preferences and necessities that created the site patterning observable on the reservation today. In addition, because much of the archeological work on the reservation and areas previously set aside as reservation has been confined to the land managed by the United States Army Corps of Engineers, the nature of the historic settlement pattern is not understood.

In order to correct this deficiency, extensive archeological fieldwork, archival research, cartographic research and informant interviews need to completed. These studies should be conducted in an orderly way, keeping in mind that the reservation is not a static geographic entity.

TOWNSHIP 129 NORTH, RANGE 79 WEST

32SI1, Boundary Mounds

Boundary Mounds, 32SI1, is a Plains Woodland site which has been previously recorded, tested and had materials published concerning it (Wood 1960; Neuman 1975). Wood (1960:71) describes the site as follows:

> The mound group consists of 3 mounds on the North Dakota - South Dakota state line...The mounds are from 1-3 feet high and about 80' in diameter. The report covers the investigation of one of the mounds which had been partially removed by a railroad cut...In the center of the mound was found the remains of a log covered tomb 10 X 12 feet containing five burials and a number of artifacts.
>
> The Boundary Mound group suggests the presence of a Woodland group extending from eastern North Dakota to the Missouri River. This complex tentatively cross-dated at about 1000 A.D....

Neuman also describes the site, links it to the Sonota complex, and discusses several radiocarbon dates from it:

> This prehistoric culture [the Sonota Complex] is known to us primarily through the archeological remains revealed at the Stelzer, Swift Bird, Grover Hand, Arpan, and Boundary Mound sites...Boundary Mound 1 (A.D. 410 ± 160), Mound 2 (A.D. 310 ± 80), and Mound 3 (250 B.C. ± 125)....to my mind, the Boundary Mound 3 date...is to early [Neuman 1975:88]

At the time of the 1984 survey, the mounds were completely inundated. In the remaining site area (located to the west of the mounds' locations on a small peninsula; Figure 6.1 and 6.2) a sparse cultural material scatter, consisting mostly of large mammal bone fragments, was observed. In addition to the bone fragments, a biface, a Late Plains Archaic projectile point (Figure 6.3a) and a flake were observed. No concentrations of bone or artifacts were noted. Surface visibility was poor. The entire site area is at or below an elevation of 1620 feet. The remaining site area is approximately 15,000 square meters.

A large portion of this site including the mound group has apparently been destroyed by consistent inundation. The remaining portion of this site has undergone extensive damage as a result of prairie dog colonization, periodic inundation and wave action. The site is therefore not believed eligible for nomination to the National Register of Historic Places and no further work is recommended.

32SI3, The Robert Zahn Site

This is the previously recorded Robert Zahn site, a Plains Village occupation. The materials remaining are exposed in the cutbank of Lake Oahe and appear to be the edge of what was once a much larger village site (Figure 6.4). In 1984, a charcoal sample, a Knife River flint biface (see Figure 6.3b) and a Riggs Plain rim sherd were collected (see Figure 6.3c) from a cache pit exposed in the cutbank. The cache pit extended from approximately .5 meters below the surface to approximately 1.5 meters below the surface. The charcoal sample was taken from approximately the center of the cache pit.

Previous references to this site include Will and Hecker (1944:89), who stated that the site:

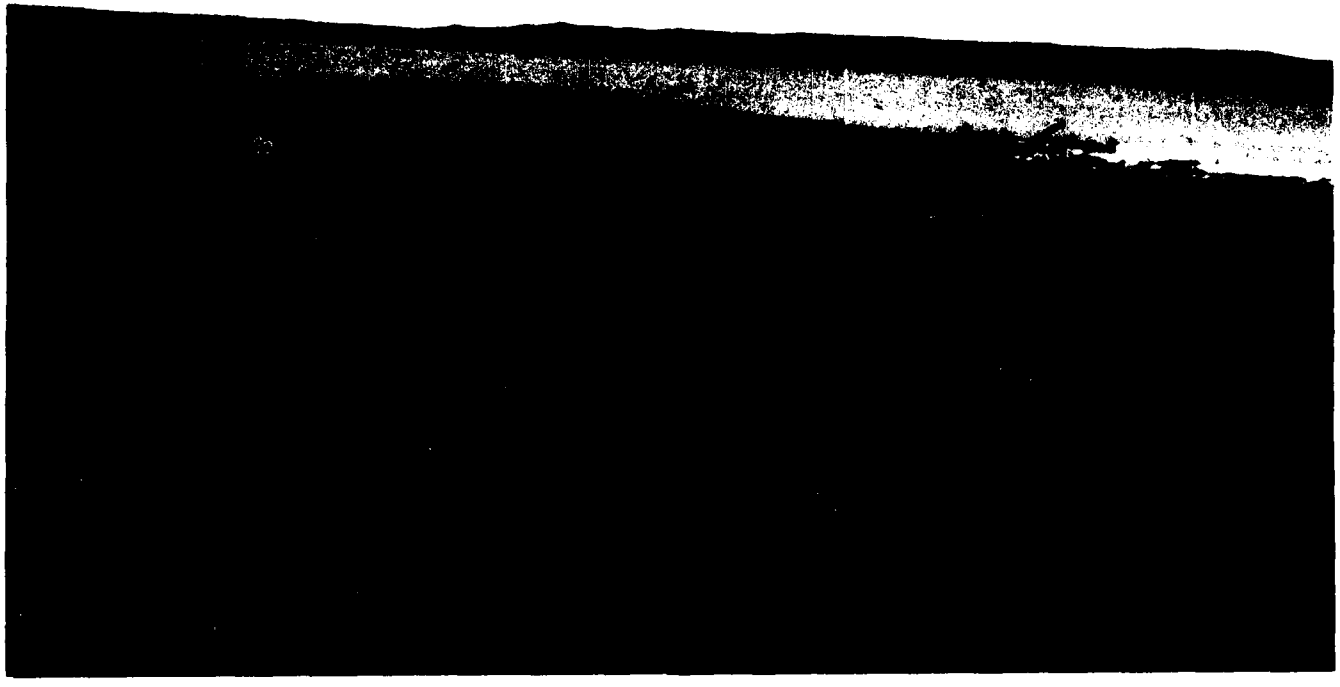


Figure 6...

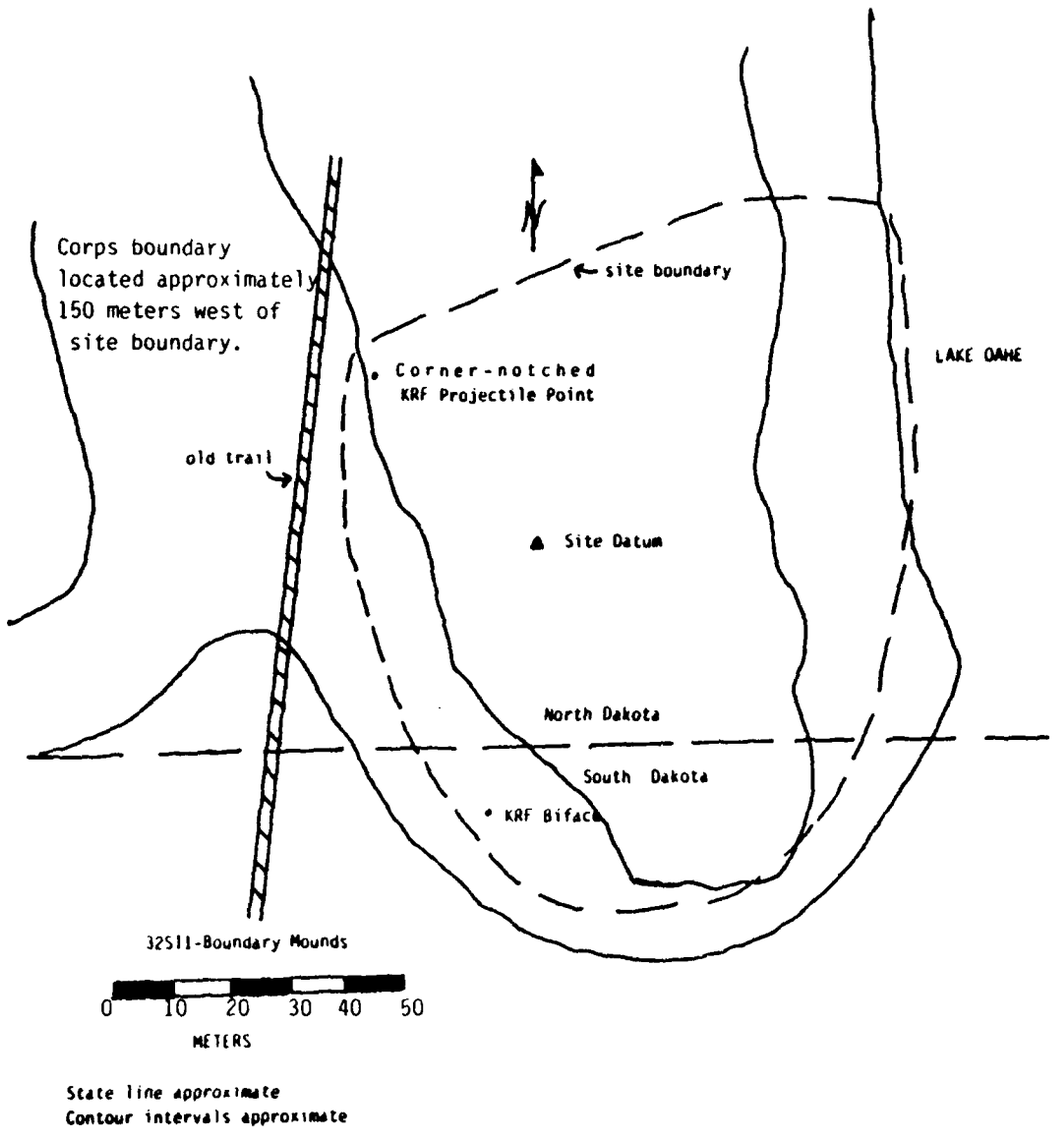
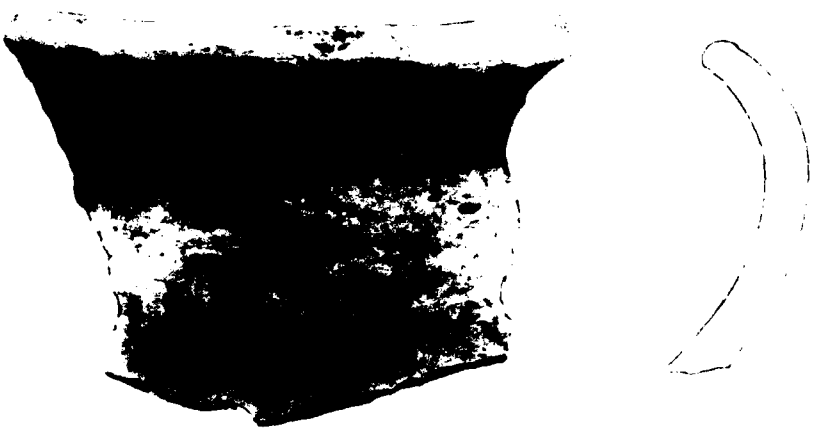


Figure 6.2. Map of 32SI1, Boundary Mounds.

a

b



c

Figure 6.3. Diagnostic artifacts from 42SI1 (a) and 42SI3 (b-c), actual size.

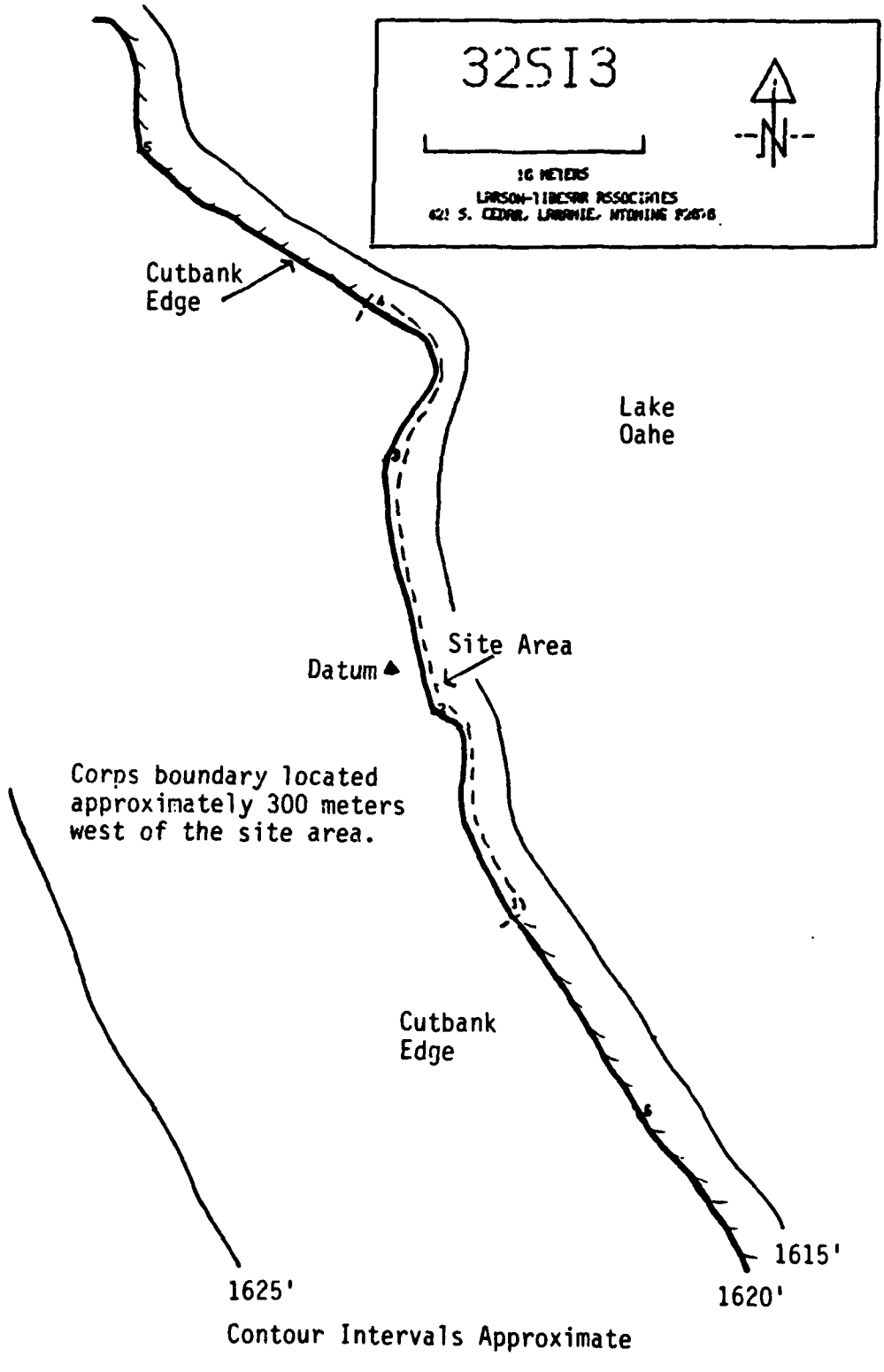


Figure 6.4. Map of 32SI3, the Robert Zahn site.

> ...covers about 10 acres and as it has been under cultivation for a number of years the greater part of the surface is obliterated. However, lodge floors show in an abandoned railroad cut now used as a highway and a number of lodge pit ruins can be faintly seen. The lodge pits appear to be ruins of rectangular type houses. There is no indication of a ditch or palisade and the site has the appearance of an early Mandan unfortified village. The potsherds are of the Archaic Mandan types.

The site was tested by the State Historical Society of North Dakota in 1955 (Wood and Woolworth 1964:59). The testing exposed a shallow, irregular pit containing formalized tools, sherds and bone tools (Wood and Woolworth 1964:59). Rim sherds from this feature were described as Riggs Plain, Fort Yates Cord Impressed, "resembling Riggs Punctate" and unclassified (Wood and Woolworth 1964:59). Lehmer (1971) assigns Robert Zahn to the Extended Middle Missouri variant of the Middle Missouri Tradition. Other references to this site include Cooper (1953), Jensen (1965) and Adamczyk (1975).

Although it is unknown how much remains of this site, the linear extent of the site indicates that there is a minimum of 35 square meters of site deposits remaining which contain, minimally, cache pits, datable materials, diagnostic artifacts and faunal remains within the recognizable cultural stratum. This site is believed eligible for nomination to the National Register of Historic Places because of its potential for yielding significant information related to the study of the Middle Missouri subarea.

32SI39

A poured concrete foundation, a partial rectangular stone alignment, a concrete-covered well, four depressions, a scatter of auto parts, clear window and bottle glass, purple-tinted decanter glass, white ware, rubber tires, horse-drawn farm machinery, and ceramic panels were recorded at this location (Figure 6.5). All buildings have been removed but the ground surface apparently has not been disturbed since the site was abandoned. This site appears to be the remains of an allotment homestead of the period 1900 to ca. 1950. Site area is 14,400 square meters.

The site is located on a terrace above the Missouri River. The closest water is an unnamed seasonal drainage located 550 meters to the south at an elevation of 1680 feet. Vegetation consists of sparse grasses. Visibility was good. Depth of cultural deposits at this site is unknown.

The property was allotted to Stephen Silk by trust patent of November 11, 1913. The Missouri River Railway Company had a right of way near the site area. The deed record for the property may be incomplete. An occupation was indicated at this location on a 1947 Corps of Engineers map.

Artifacts on this site appear to date from the period 1920 to 1950 and do not indicate a likelihood for the site to yield important cultural information. The single known previous owner of the site does not appear

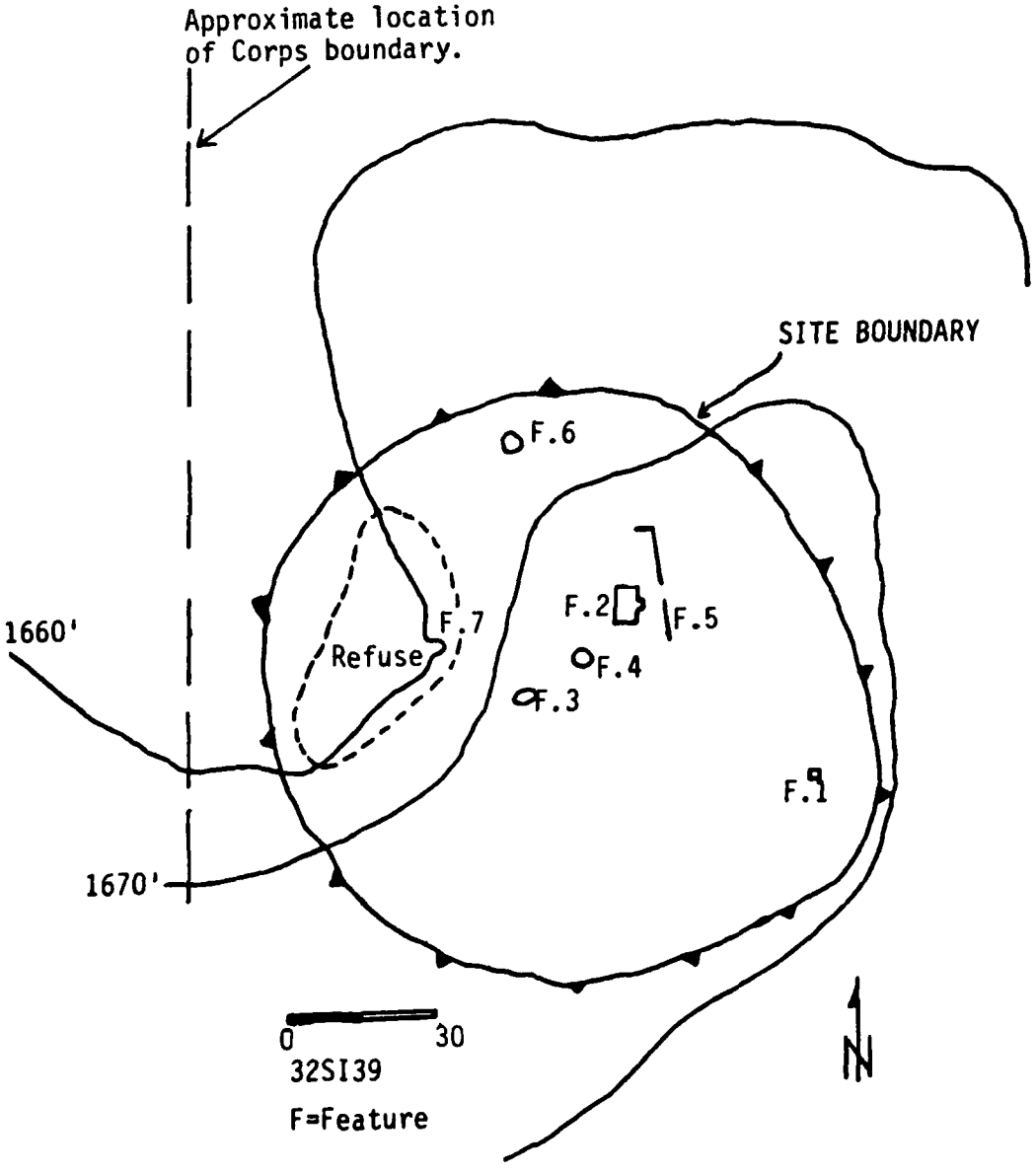


Figure 6.5 Map of 32SI39.

to have been particularly important in history and archival sources do not indicate other possible historical significance for the site. This site is not believed to be eligible for nomination to the National Register of Historic Places.

32SI43

This site is an abandoned allotment homestead which contains the ruins of a log structure (Figure 6.6), a log sill outline of a second structure, two cellar depressions, and a large scatter of clear window glass, automobile parts, modern crimp cans, a portion of a Coca-Cola bottle, parts of gas ranges, and cut lumber. Site area is 7150 square meters (Figure 6.7). The site retains fair integrity. Most structures have been removed but the ground surface does not appear to have been disturbed. Cut banks and the beach of Lake Oahe do not exhibit indications that the site has been eroded. This site appears to be an allotment homestead dating after 1900. Artifacts indicate occupation until at least the mid-1950s.

This site is located on a gentle, grass-covered hillslope. Visibility at the site is good. Cultural depth of the site is unknown. An unnamed seasonal drainage is located 1125 meters to the south. The site and the drainage are at an elevation of approximately 1630 feet.

The property was patented to Edith Larieveve on December 6, 1917. Subsequent owners have been: Sioux County (1942, by tax deed); Helen Essert (1957, by county deed); and United States (1961, by condemnation).

This site is a relatively intact example of archeological remains of a post-1900 Indian allotment homestead and may therefore have value for comparative historical archeological study. The significance of this site is unknown and should be evaluated after the development of a context for the evaluation of early twentieth century reservation sites.

32SI44

Site 32SI44 was probably an early reservation period farmstead. It now consists of a single cellar depression with a portion of a poured concrete and fieldstone foundation (Figure 6.8). The site is approximately 600 square meters. The remaining ground surface has not been disturbed.

Located immediately adjacent to the cutbank, 32SI44 is situated on gently sloping terrain. Some deposition is undoubtedly present and probably retains good integrity. An unnamed seasonal drainage is located 610 meters from the site. Both the site and the unnamed drainage are at an elevation of 1620 feet. At the time of the survey the major vegetation was grasses and visibility was good.

This site appears to date to the period 1880 to perhaps 1940, with most artifacts dating from the period 1900 to 1920. The property was patented by Stephen Silk on August 12, 1925. Subsequent owners have been: Myrtle and William Corbin, Edith and Melvin Kambak, Ethel and Alva Heller, Eva and Edward Paulson, Fred and Carol Shubek (1954); H. M. Wallace (1954); and Maude E., Lew E., and Gayle E. Wallace (1977). The Missouri River Railway

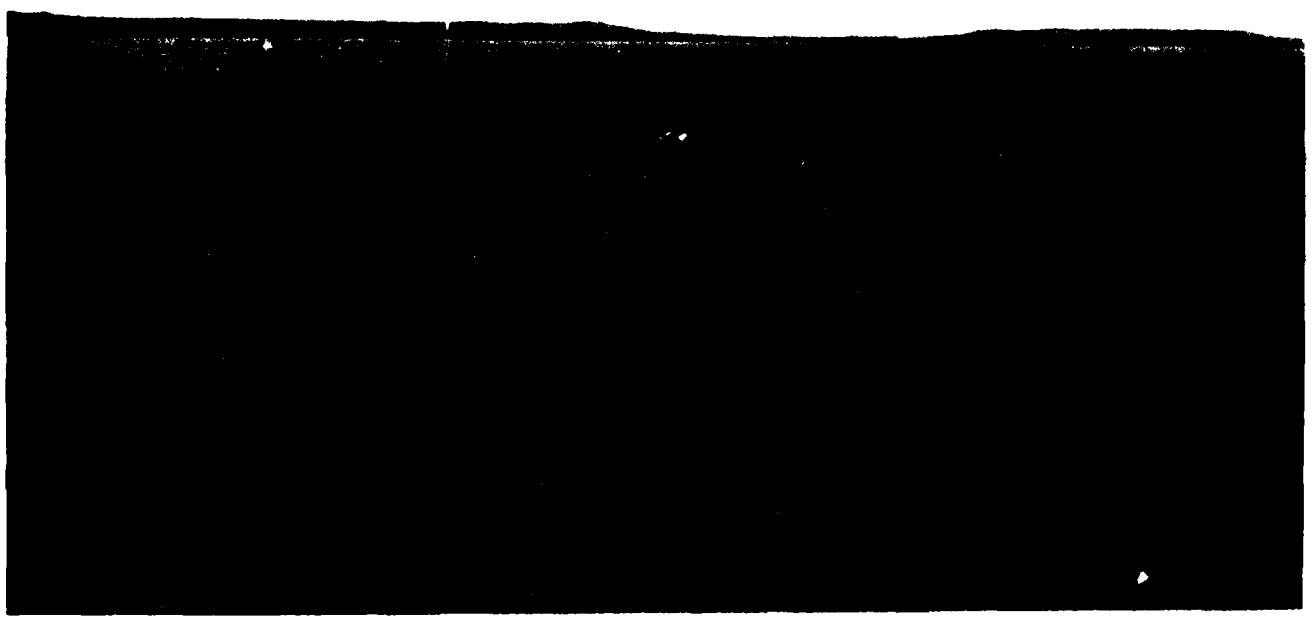


Figure 6.6. Collapsed log structure at 32SI43.

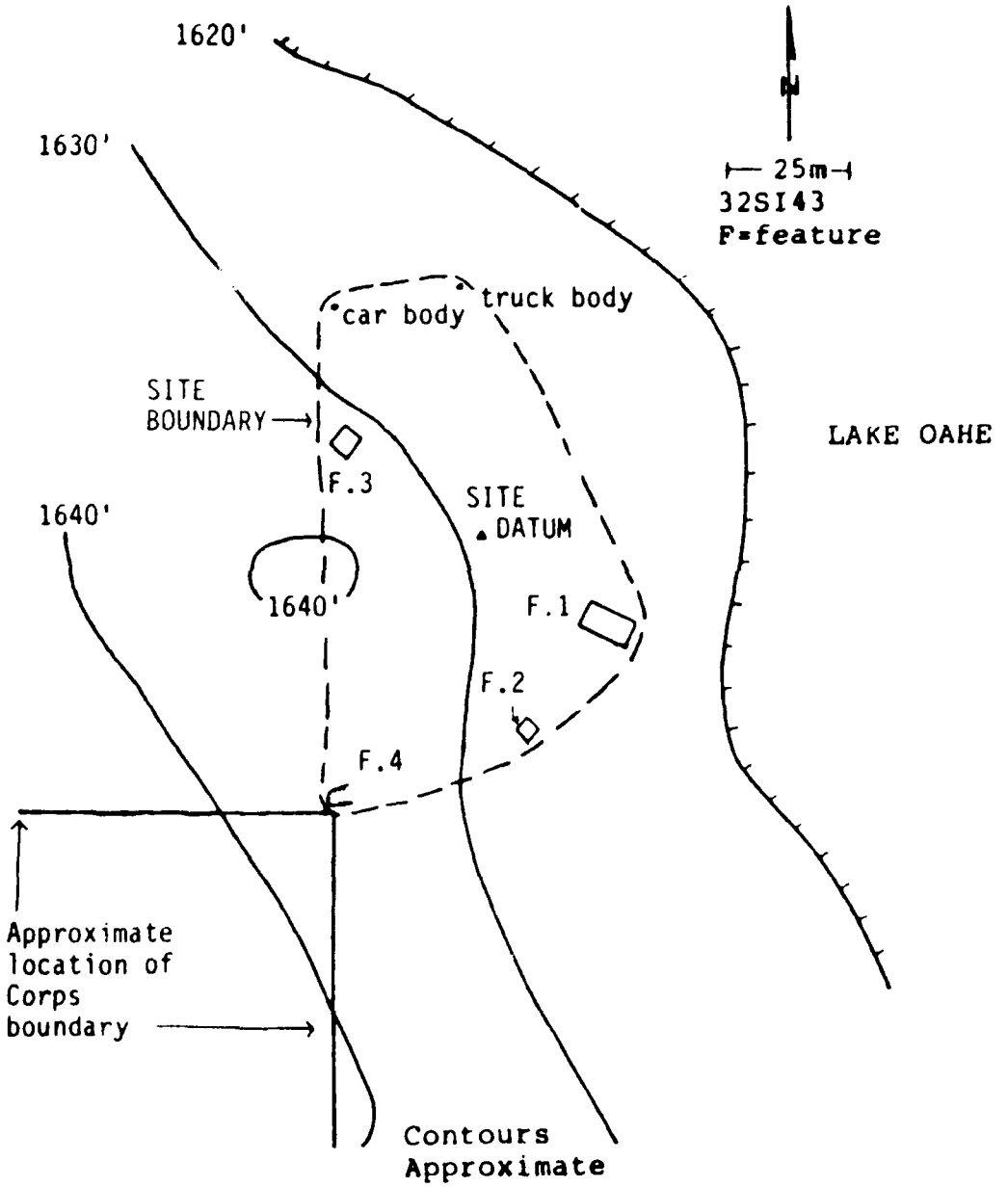
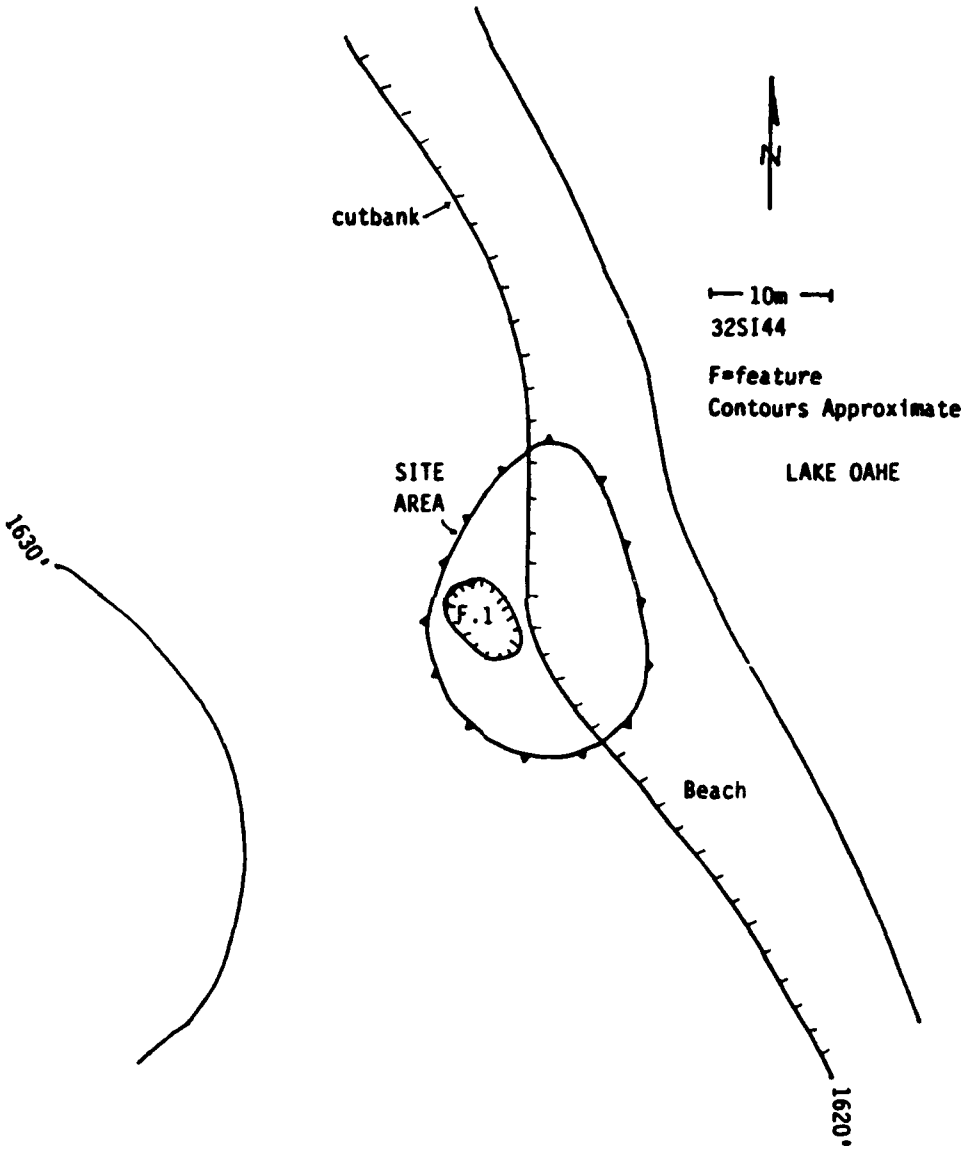


Figure 4.4. Map of [illegible].



Corps boundary approximately 300 meters west of site area.

Figure 6.8 Map of 32SI44.

Company received a right of way in 1906. The Northern Pacific Railway Company relinquished that right of way to the United States in 1937 (by quit-claim deed).

This site may be of value for comparative historical archeological investigation. The site is in danger of destruction from wave action. Despite this the site appears to maintain good integrity. The range of artifacts found on the site indicate that test excavations would yield information about the changing material culture of the Sioux on the Standing Rock Reservation during the early reservation period. This site should be considered as a rural counterpart of the historical component of 32SI5, which was the community of Slab Town. Testing should be conducted to determine the nature of subsurface remains and hence the eligibility for nomination to the National Register of Historic Places.

32SI48

This site is an abandoned farmstead which now contains a partially collapsed cribbed pole structure, the apparent remains of a dwelling or the location of a dwelling, the remains of an outhouse, a cistern or well, two depressions of undefined function, at least two auto bodies of the mid to late 1950s, the remains of a tractor, and the remains of at least two other wood-frame structures (Figure 6.9). Site area is 9900 square meters. Most buildings have been removed, but the site appears to be a post-1930 farmstead.

An unnamed seasonal drainage bisects 32SI48. Elevation is approximately 1640 feet. Visibility was poor in most areas due to the dense riparian vegetation.

The property was allotted to Henry Fireheart by trust patent of December 21, 1908. Subsequent owners have been: William J., Samuel A., Marcella, and Alvina Alkire (1941); and Ruth Alkire Snider (1976, by gift deed). The Missouri River Railway Company had a right of way (1906) near the site area.

The architecture of the existing standing structure is simple and the site does not exhibit other physical distinction. This site should be evaluated to determine significance after development of a context for the evaluation of early twentieth century reservation sites.

32SI52

This site is an abandoned farmstead which consists of a number of depressions and refuse deposit which contains pieces of brown glass and pieces of aqua colored glass (probably a whisky bottle) embossed "Jacob Riess Shakopy." All structures have been removed and few artifacts are visible. The site apparently has not been disturbed since abandonment. A portion of the eastern part of the site may have collapsed into the river due to erosion however, no artifacts were visible in the bank or shore area below the cutbank. Site area is 6600 square meters. A map of the site is presented in Figure 6.10.

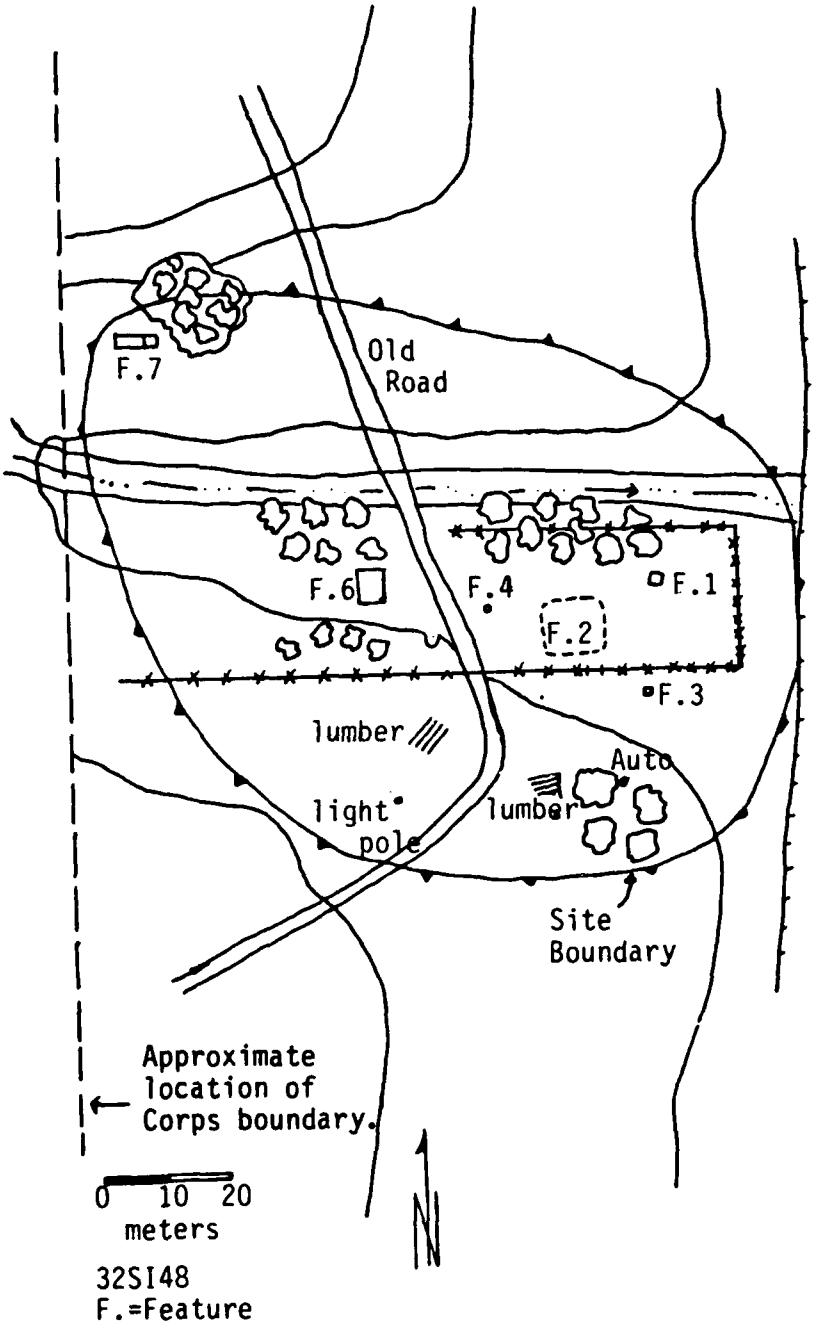


Figure 6.9. Map of 32SI48.

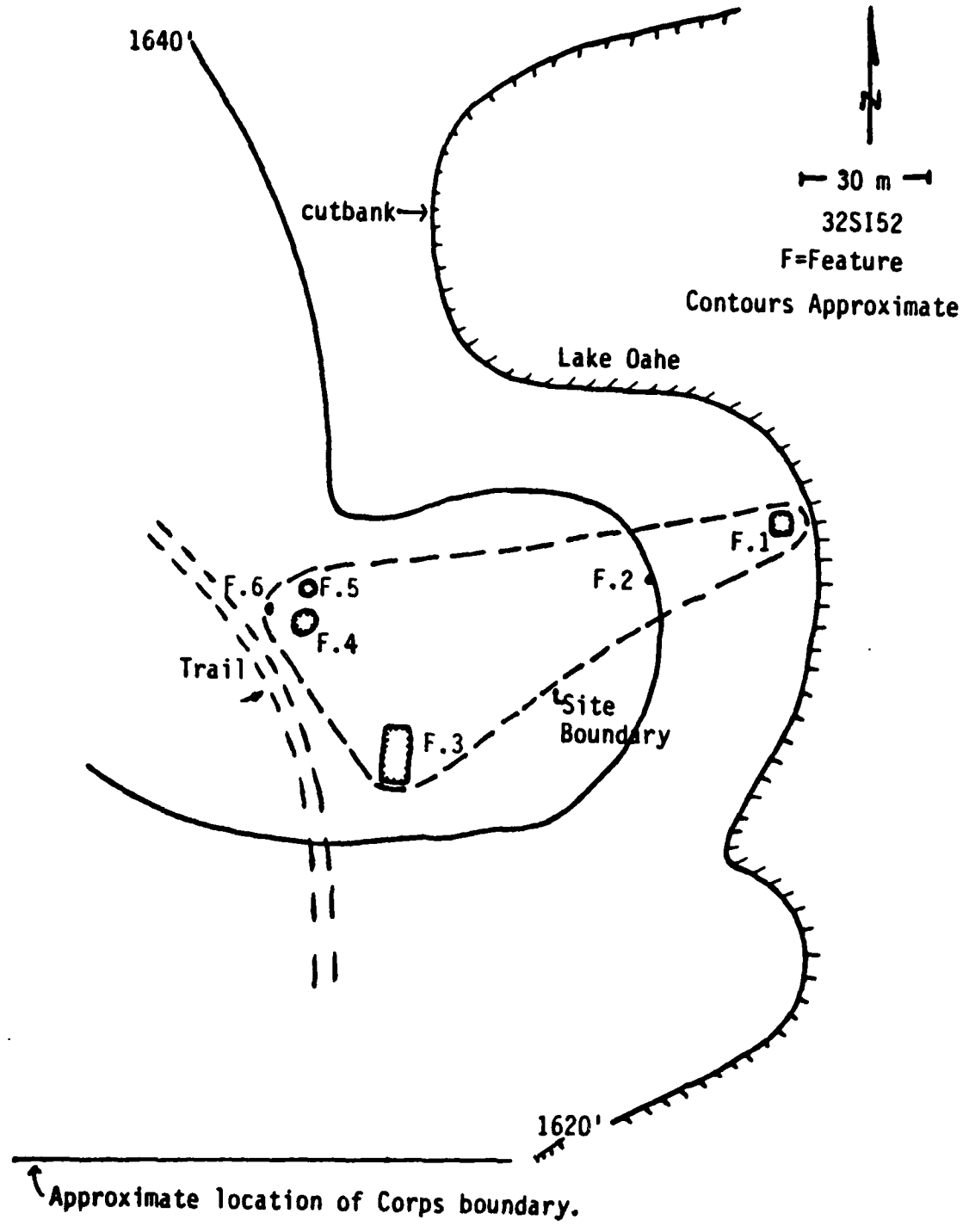


Figure 6.10. Map of 32SI52.

The site extends from the cutbank (1620 feet elevation) to a two track road approximately 90 meters to the west. Terrain is gently sloping and densely vegetated with various grasses and shrubs. An unnamed seasonal drainage is located 244 meters north of the site at an elevation of 1620 feet. Presence or absence of buried cultural material at this site is undetermined.

A General Land Office Survey plat of 1893 indicates a large farmstead at this site location. A 1947 Corps of Engineers maps does not indicate occupation in the site area.

The property was allotted to Mary Halsey by a trust patent of December 27, 1909. Subsequent owners have been: Sam, Charles, William and Peter Halsey, Mary Many Wounds Halsey, Mrs. Robert Zahn, and Mrs. Charles Archambault (1936); Anita and Peter Many Wounds (1949); George Perry and Peter Many Wounds, Phyllis Many Wounds Faison, Leona Many Wounds Claymore, John D., Antoine, and Elenor Howard, and Marion Howard Rawlson (1954).

None of the persons associated with the site appear to have been particularly important in the history of the region, and archival sources do not indicate other possible historical significance for the site. The site appears to have fair integrity. The significance of this site is unknown and should be evaluated after the development of a context for the evaluation of nineteenth and early twentieth-century reservation sites.

32SI54

A poured concrete foundation and a depression were recorded at 32SI54 (Figure 6.11). Site area is 250 square meters. All buildings have been removed but the site does not appear to have been otherwise disturbed since it was abandoned. The site appears to have had at least one log structure on it. This site was probably an allotment farmstead.

Located on a slope below a small rise, this site is densely vegetated. Many of the plants within the site area are typical of disturbed areas (e.g., yucca). Cultural depth at the site is unknown. An unnamed seasonal drainage is located 518 meters to the south. Both the site and the drainage are located at an elevation of 1620 feet.

The property was allotted to Charles Halsey by trust patent of December 21, 1908. Subsequent owners have been: Josephine Halsey (1918), and Mary Halsey Martin (1924).

None of these persons associated with this site appear to have been particularly important in history and archival sources do not indicate other possible historical significance for the site. The site appears to have fair integrity. The significance of this site is unknown and should be evaluated after the development of a context for the evaluation of early twentieth century reservation sites.

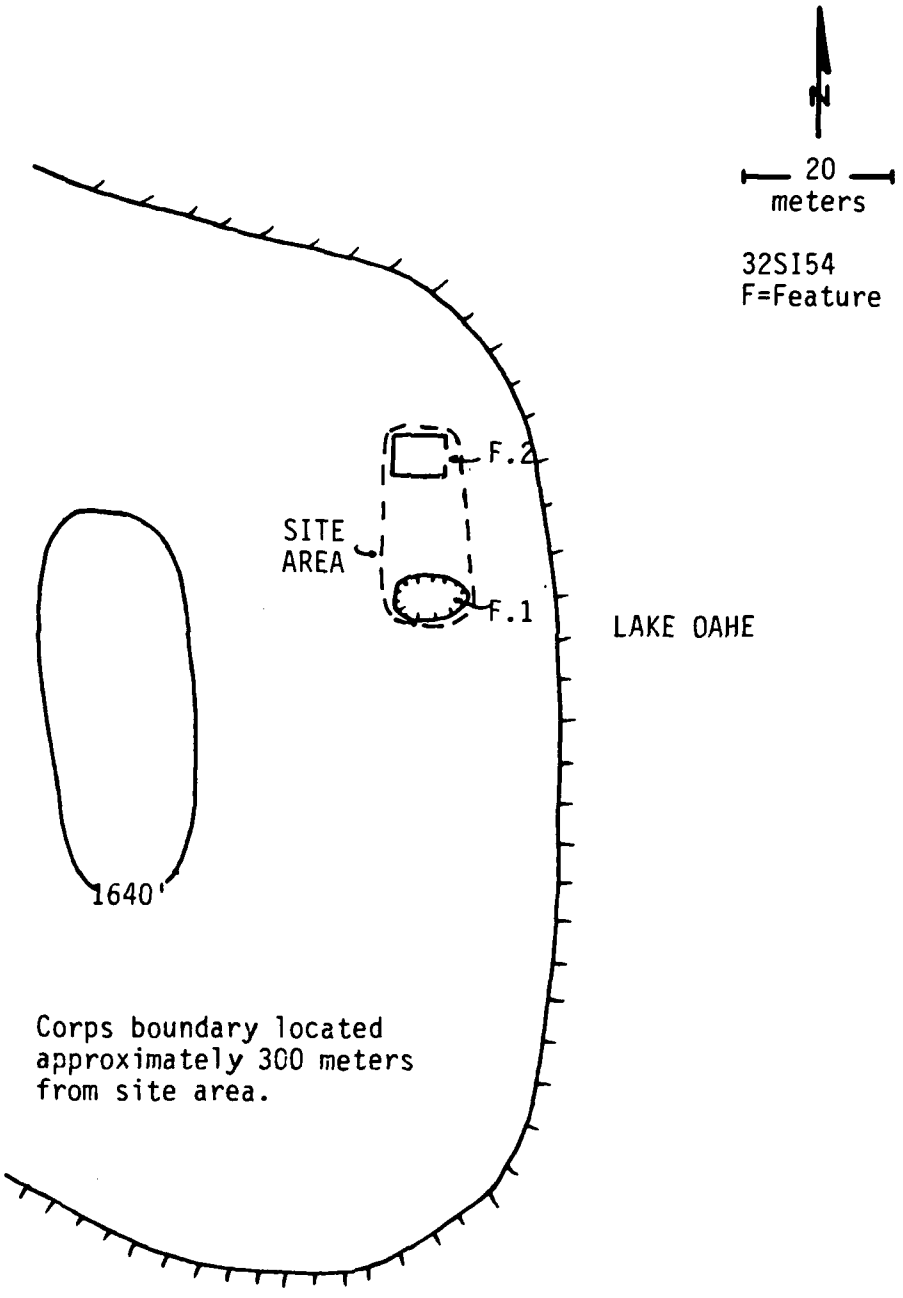


Figure 6.11. Map of 32SI54.

32SI55

The remains of an apparent farmstead were recorded at this location. The site includes seven depressions, a concrete foundation, and a small scatter of post-1920 domestic and farm-related items (Figure 6.12). It covers an area of approximately 5800 square meters. The site appears to have been disturbed within the past 20 years.

This site is located on the gentle slope of a hillside. Vegetation is dense and consists mainly of grasses and shrubs. An unnamed seasonal drainage is located 853 meters from the site. The drainage and the site are located at an elevation of approximately 1630 feet.

The property was patented to William Frederick Kimball on November 10, 1919. Subsequent owners have been: Frank Andrew and Hazel Haney (1925); State of North Dakota (1936); John M. Stiles (1959, by tax certificate); and W.T. Thompson (1959, by tax certificate assignment). None of these persons appear to have been particularly important in history.

The significance of this site is unknown. Testing and archival research are needed to identify the content, age and extent of this site prior to determination of eligibility for nomination to the National Register of Historic Places.

LT684-40IF

This isolated find is a Knife River flint biface fragment.

LT684-45IF

This isolated find is a Knife River flint tertiary flake, size grade 3 (i.e., greater than or equal to one-half inch but less than one inch in size).

TOWNSHIP 130 NORTH, RANGE 79 WEST

32SI41

This is an abandoned allotment farmstead which consists of a foundation/cellar, a small depression, and a scatter of post-1950 artifacts (Figure 6.13). All structures have been removed. The edge of a cultivated field is located approximately 10 meters from the west edge of the site. No evidence for other features was recognized in this field. The site covers an area of 900 square meters.

This site is located on a terrace above the Missouri River. Vegetation was dense and chiefly composed of grasses and shrubs. Visibility was fair to good. Depth of the cultural deposits at the site is unknown. An unnamed seasonal drainage is located 40 meters from the site.

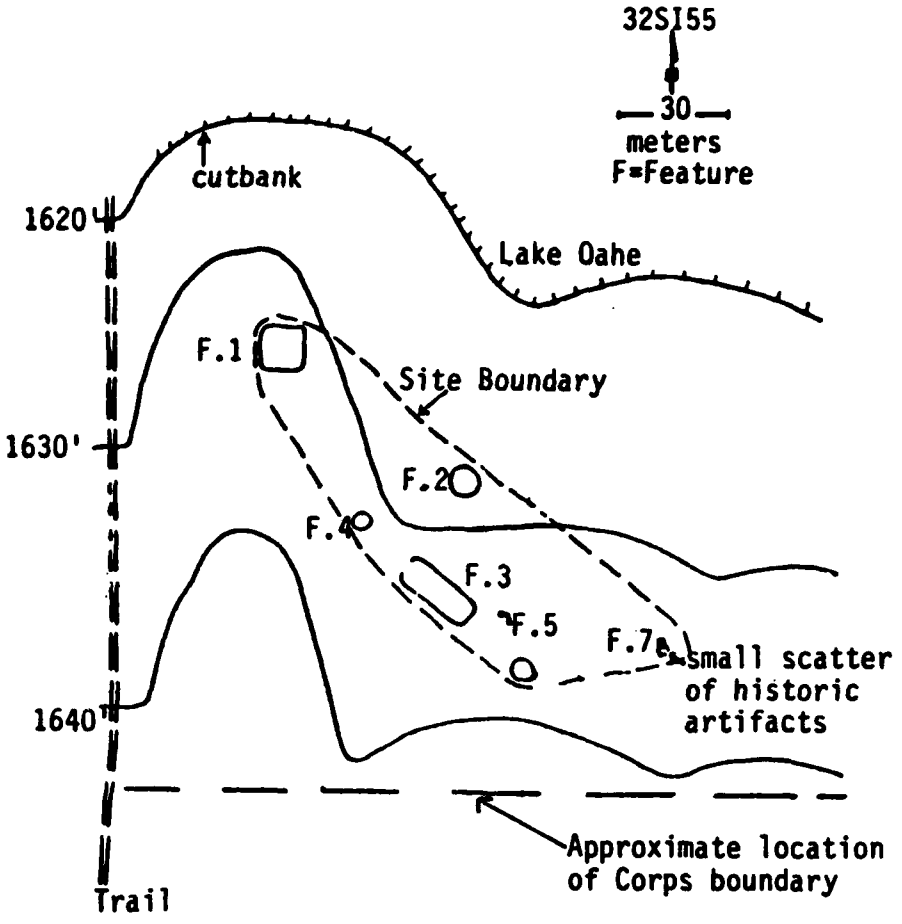


Figure 6.12. Map of 32SI55.

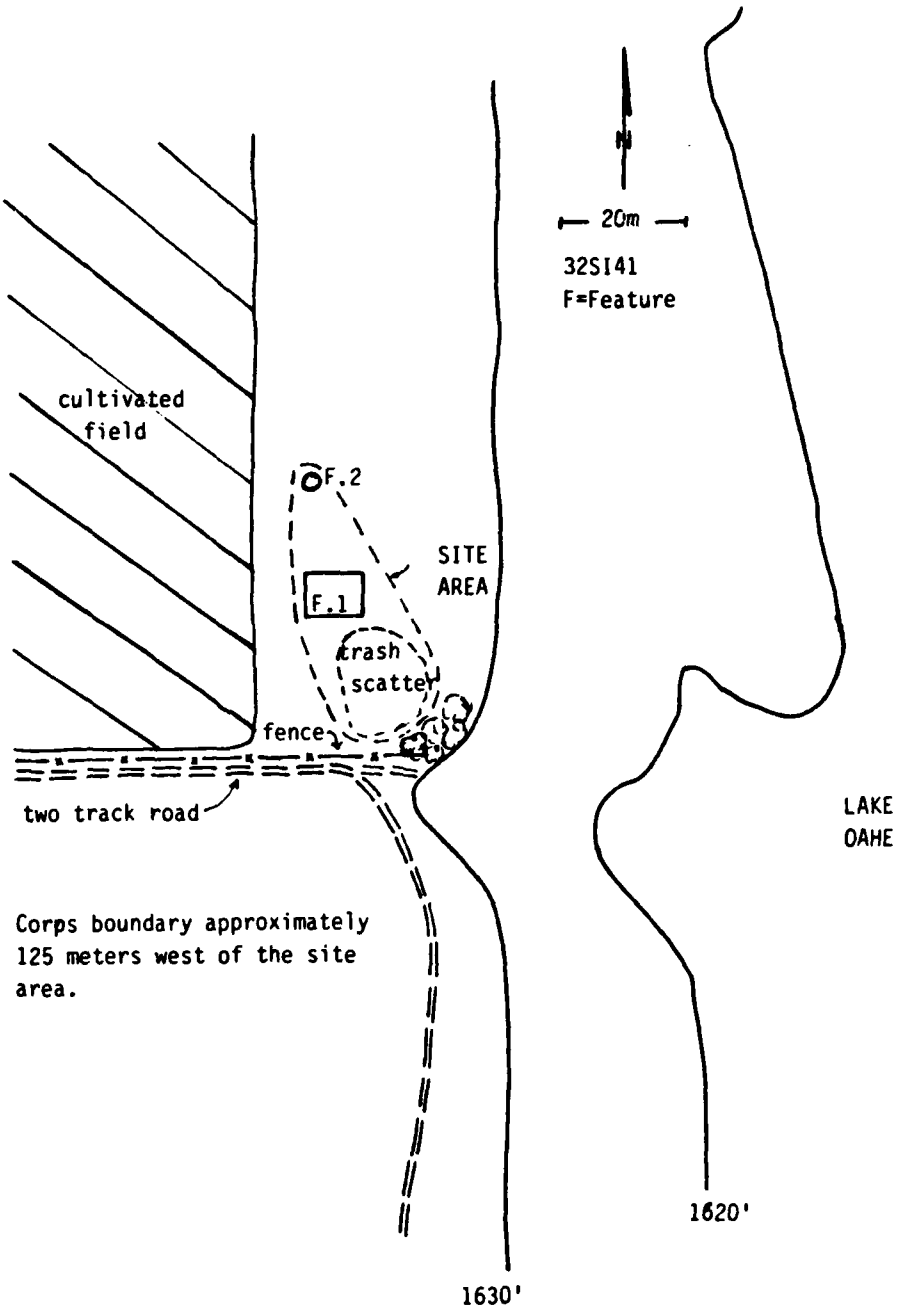


Figure 6.13 Map of 32SI41.

The property was patented to Robert Pleets on February 4, 1920. Subsequent owners were: Godwin W., Delia V., Gus W., and Luella J. Hokanson (date unknown); E.M. Bickford (1930); M.J. and Lydia R. Reichert (date unknown); and Standing Rock Sioux Tribe (1936).

Early General Land Office maps and Corps of Engineers maps do not indicate settlement at this location. This site has low integrity and does not appear likely to yield important cultural information. None of the persons associated with the property appear to have been particularly important in history and archival sources do not indicate other possible historical significance for the site. This site is therefore not believed to be eligible for nomination to the National Register of Historic Places and no further research is recommended.

32SI45

Site 32SI45 is an apparent abandoned farmstead which now consists of a fieldstone and concrete foundation and depression (Figure 6.14). All buildings have been removed but the site surface is mostly undisturbed. The site covers an area of 1200 square meters. Artifactual material indicates that this site was occupied from some time prior to 1900 to some time after 1935. The north edge of the site has a road through it, and contains a number of items dating from this time period. A 1905 penny from the area of the two track road is illustrated in Figure 6.15. Other artifactual material observed at this site included an 1889 Indian head penny; fragments of willowware transfer print, whiteware and green glazed yellowware ceramics; an aqua glass canning jar fragment; and historic faunal material. A General Land Office survey plat of 1893 indicates a settlement at this location. A 1947 Corps of Engineers map also shows a farmstead at this site location.

This site is located on a terrace above the Missouri River, approximately 500 meters from the last recorded channel. Vegetation was dense and consisted predominantly of grasses. Visibility was fair at the time the site was recorded. Depth of cultural deposits at the site is unknown.

The property was allotted to William Halsey by a trust patent of October 3, 1907. Subsequent owners have been: Sophia Halsey (1932) and John Halsey (1948). A William Halsey was post interpreter at Fort Yates and at Standing Rock Agency circa 1876 (Milligan 1976:64-66,74). He was the grandson of Kills Eagle (Milligan 1976:74).

Further archival research and informant interviews should be completed to determine if this is the allotment and home of William Halsey the interpreter. Halsey's length of residence, and any prior residents at this site, should also be established. In addition, Halsey's importance should be established relative to a nineteenth and twentieth century reservation context.

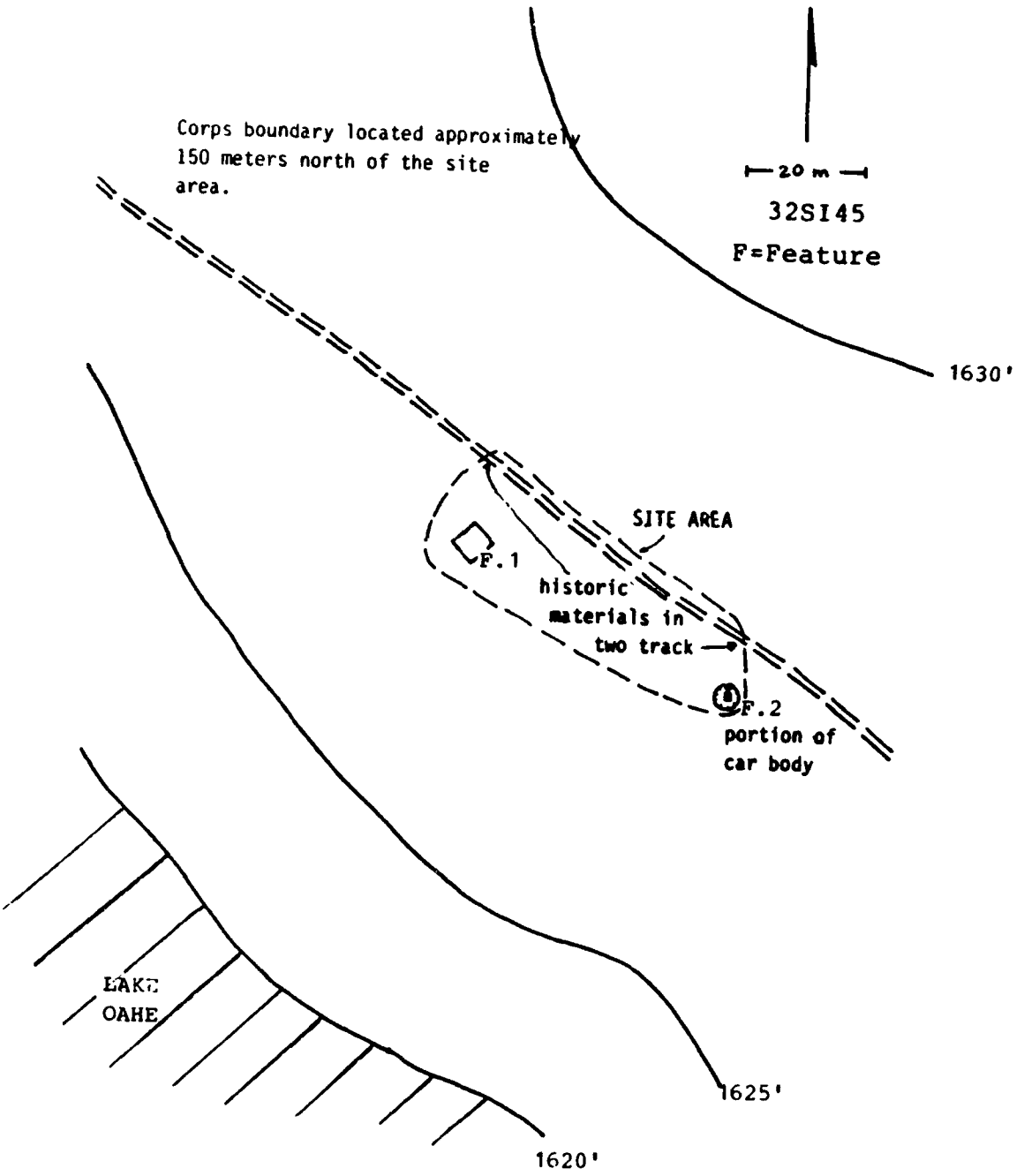
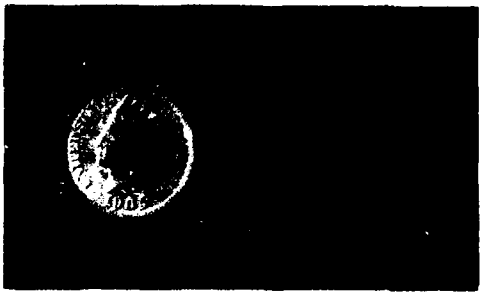


Figure 6.14. Map of 32SI45



a

b

Figure 6.1b. Artifacts from 32S145 (a) and LT684-471F (b), actual size.

32SI53

This site consists of lithic debitage (n = 26), at least eight glass seed beads (one red and seven blue), and one cartridge casing exposed in a two-track trail (Figure 6.16). Approximately 26 flakes were also observed in the trail ruts. Site area is estimated at 300 square meters. The majority of the flakes are Knife River flint or Tongue River silicified sediment.

The cartridge casing is from a .44 cal. Pointed or Flat rimfire cartridge (Castle Books n.d.:155). The headstamp consists of a raised "H" within a circle. White and Munhall (1963:27) describe this headstamp design as an "early style" rimfire marking used by Winchester, but they do not give any specific dates. The Winchester Repeating Arms Company was established in 1866 (Berge 1980). Illustrations from Winchester's 1896 catalogue (Johnson and Haven 1943:42) indicate that the headstamp had been changed to an "H" with no circle around it by that date. The age of manufacture for the artifact is therefore believed to be between 1866 and 1896.

The firearm in which the cartridge was used had a double firing pin, probably indicating an early lever action Henry rifle (a nearly identical casing with similar double firing pin marks was also recorded as isolated find LT684-117, in T. 135 N., R. 79 W.). Archival sources indicate that the Henry rifle was easily and frequently obtained by the Dakota on Standing Rock, particularly in the 1870s. The Standing Rock Indian Agent John Burke's "Report on Sources of Indian Arms and Other Matters, 1875" states:

> In reply to the communication of the 2nd inst requesting additional information to that furnished from this Agency in reply to your inquiries of the 11th ulto I submit the following answers:
>
> Question One
>
> By what means do the Indians obtain fire arms and ammunition and how many of your Indians guns and what is the character of their arms-
>
> Answer One
>
> Arms are obtained by Indians mostly from military posts, also from discharged soldiers and Government employees and contractors (War Dept.) They also obtain quantities from Bismarck, D.T. and some they procure from the partly civilized Indians residing in the Red River country, who have easy access to purchase. The arms thus secured are principally Henry Rifles, and fixed ammunition for the same there are about 1,000 in the hands of Indians of this reservation [Milligan 1976:149-150].

The position of the exposures of cultural materials in the two track trail indicate that materials may be buried as much as 20 to 30 centimeters

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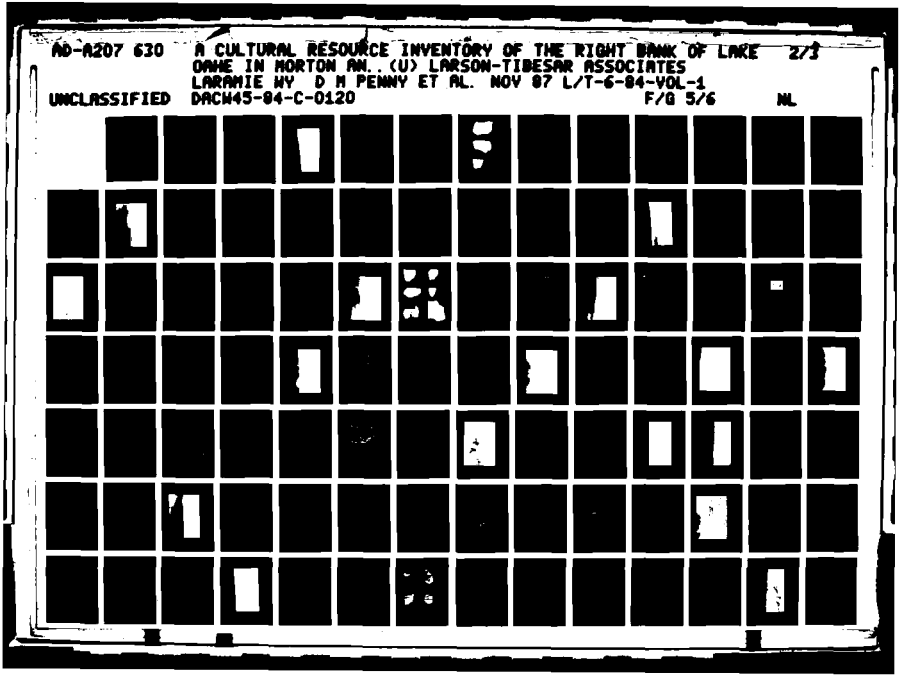

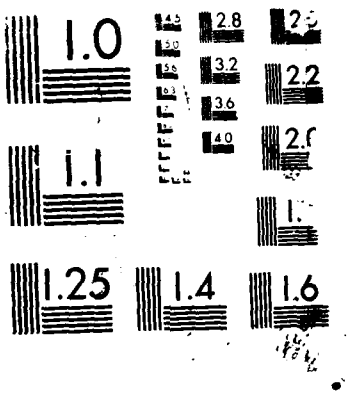
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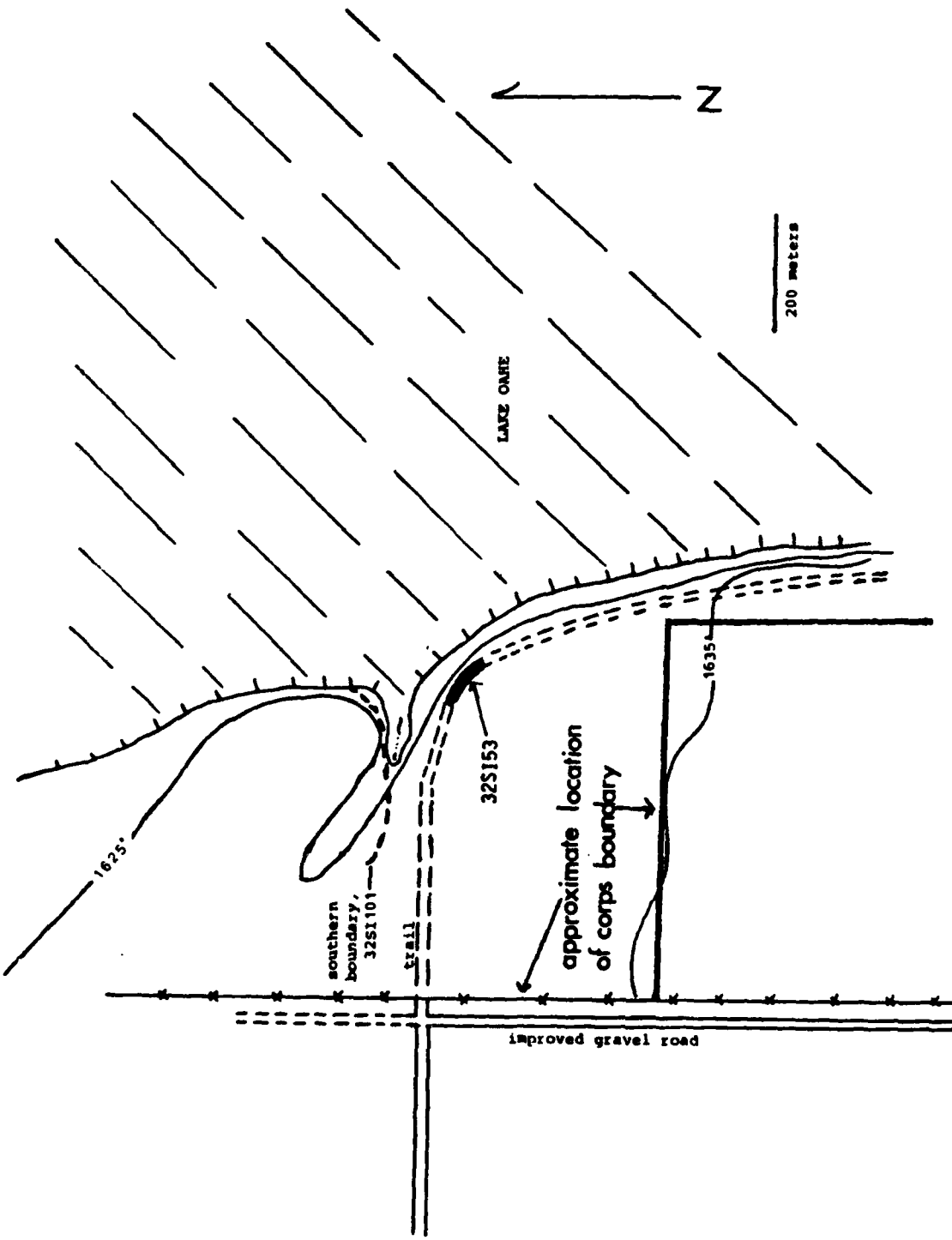


Figure 6.16. Map of 32SI53.

below the present ground surface. The site appears to have the potential for reasonably good physical integrity.

This site is located on a terrace above the Missouri River at an elevation of approximately 1620 feet. Site area includes an estimated 300 square meters immediately adjacent to the cutbank. Surface visibility was good within the two track trail. An unnamed seasonal drainage is located 50 meters from the site at an elevation of 1620 feet.

This site should be tested to better determine its extent and physical integrity. It also needs to be established whether the lithics and historic items are the result of a single event or if they represent two separate components. The existence of an early historic site containing both native and Euroamerican items would be of value to a number of significant research topics dealing with historic Native American utilization of the area.

32SI101

The site number 32SI101 was originally assigned to a site form submitted by Lee Clayton (formerly with the Department of Geology, University of North Dakota) in July of 1969. Clayton apparently first noted the site on the 1957 U.S.D.A. aerial photo (#BAA-47-67,68):

> House depressions (at least 2 dozen) are elongated (rectangular ?) in 4 rows. Reservoir waves are rapidly eating into edge of site.

Clayton also appears to have visited the site since he describes the artifact assemblage:

> Abundant broken bison bones, smaller mammals, large bird bones, abundant blackened pottery fragments, Knife River Flint chips, clam shells [both quotes taken from original 1969 site form].

At the time of the site visit in 1984, lodge depressions and cache pits were visible in the cutbank (Figure 6.17). A number of large depressions could also be seen in the sodded in area of the site (Figure 6.18). That the lodges were actually in rows could not be determined from our mapping activities. More recent Corps aerial photos indicate the presence of some depressions, but, again, the "rows" cannot be detected.

It is very likely that 32SI101 is the same site recorded by Farrell and Hoffman of the River Basin Survey as 32SI202 in August of 1952. The site may also relate to a "Cheyenne Village" noted by Lewis and Clark in 1804:

> The remains of a fortified Town of the Chyenes or Sharhe [indecipherable word] on their retreat from their town [indecipherable word] when driven by the Sioux [Moulton 1983:Map 26].

In his discussion of sites possibly related to Biesterfeldt, Wood discounts the idea that any of the sites in the vicinity of Four Mile Creek might be Cheyenne in origin:

Figure 6.17. Lodge depressions and cache pit visible in a portion of the cutbank at [illegible].

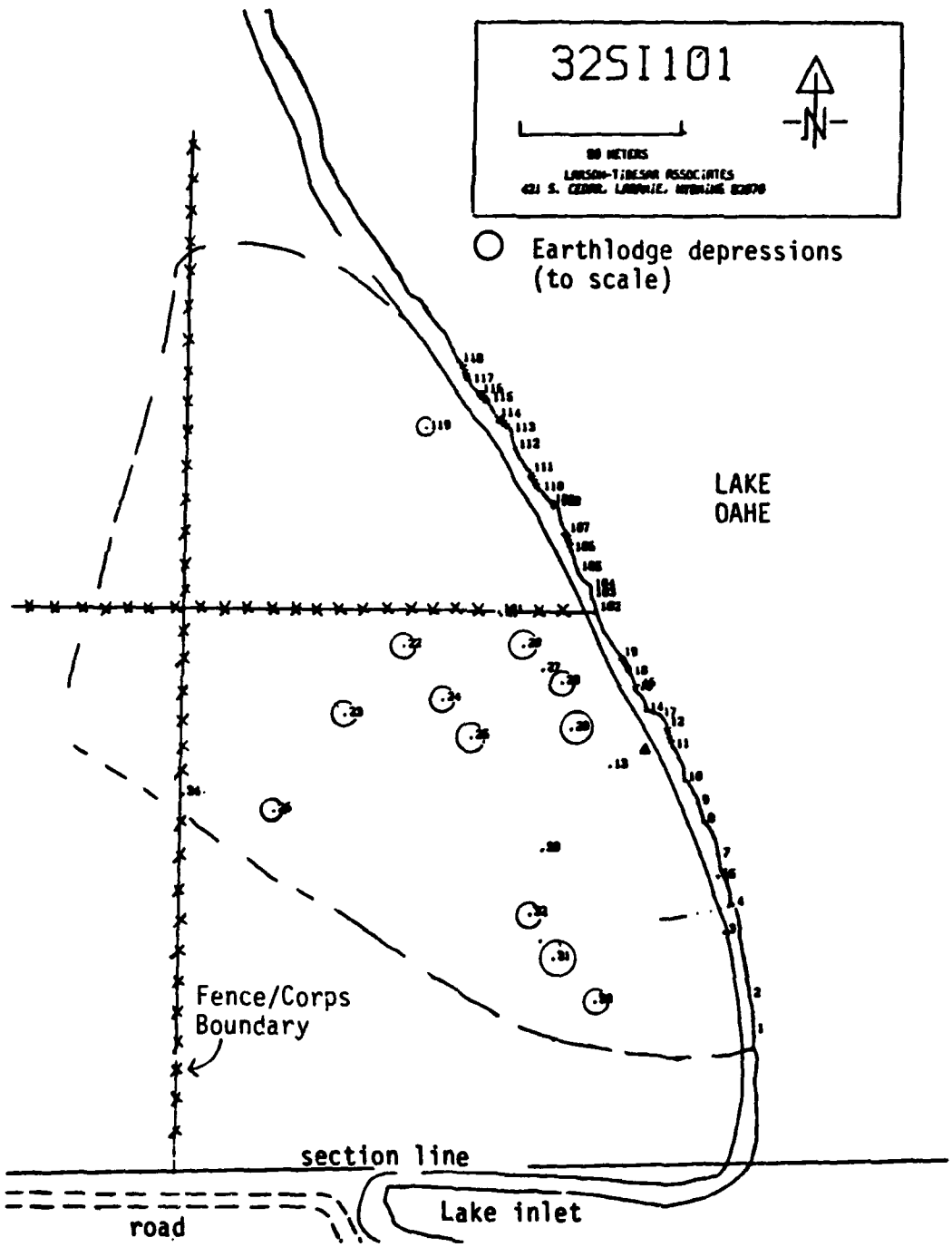


Figure 6.18. Map of 32SI101.

> References in the journals of Lewis and Clark and Ordway on October 1804, quoted earlier, may well refer to a village near the mouth of this creek, about six kilometers south of Fort Yates..., although there is no present evidence for such a site. Will (1924, p. 333) refers in passing to a Cheyenne site reputedly found by Emil Steinbrueck near the mouth of this creek, although no one since has commented on this possibility....
>
> Gordon W. Hewes surveyed the lower course of Four Mile Creek in 1947 without locating anything of significance (Hewes, 1949, p. 23), and my own inspections of the creek mouth in 1955, 1956, and 1969 confirm his observations. The nearest known site above the mouth is 32SI22, about three kilometers to the north, about which nothing is known. Adjoining 32SI22 to the north is a long-rectangular house village, 32SI101 (James Sperry, personal communication); the house type there excludes this site as a Cheyenne village. Finally, Site 32SI202, near the mouth of One Mile Creek, is a occupational site at which earth lodges may have been obscured (Cooper 1953, p. 46). None of the material from these sites suggests they are anything other than manifestations of local prehistoric complexes [Wood 1971:65].

It should be noted that site number 32SI22 was assigned to a location by J. Bauxar in 1947. This assignment was based entirely on the notations in the Lewis and Clark Journals and was never substantiated in the field. Although Wood is likely correct in stating the 32SI101 is not Cheyenne, it seems equally likely that 32SI101, 32SI202, and 32SI22 are all the same site. If their information was incorrect regarding its history, this may also be the site observed by Lewis and Clark. There are no indications, however, that 32SI101 is fortified, as the Lewis and Clark accounts indicate it should be.

Cultural material noted in 1984 include ceramics, Knife River flint debitage, bone, and bone tools, all eroded from the active cutbank. The bank exposure indicates that the cultural level begins approximately .75 meters below the present ground surface. Rim sherds examined include Fort Yates Cord Impressed (Figure 6.19a) and Riggs Decorated Lip (Figure 6.19b). An unidentified rim sherd with triangular tool impressions below the lip (Figure 6.19c) was also collected.

Vegetation in the site area is mixed prairie grasses. Visibility in the site area is good. A small brush filled intermediate drainage forms the southern boundary of the site. The elevation of 32SI101 is 1625 feet. The mapped site area of 32SI101 is 35,500 square meters.

Judging from the sketch map supplied in the Clayton site form, much of the site may have eroded since 1969 (Figure 6.20). However, since Clayton apparently did not establish a datum it is impossibly to quantify this loss. The deposits exposed in the cutbank and the appearance of the depressions on the surface, however, indicate that much of the western portion of the site remains intact. This is has the potential to add significantly to our understanding of Middle Missouri prehistory. Although the outward appearances of the site indicate that it is much older than Cheyenne (probably Extended Middle Missouri), there is still the

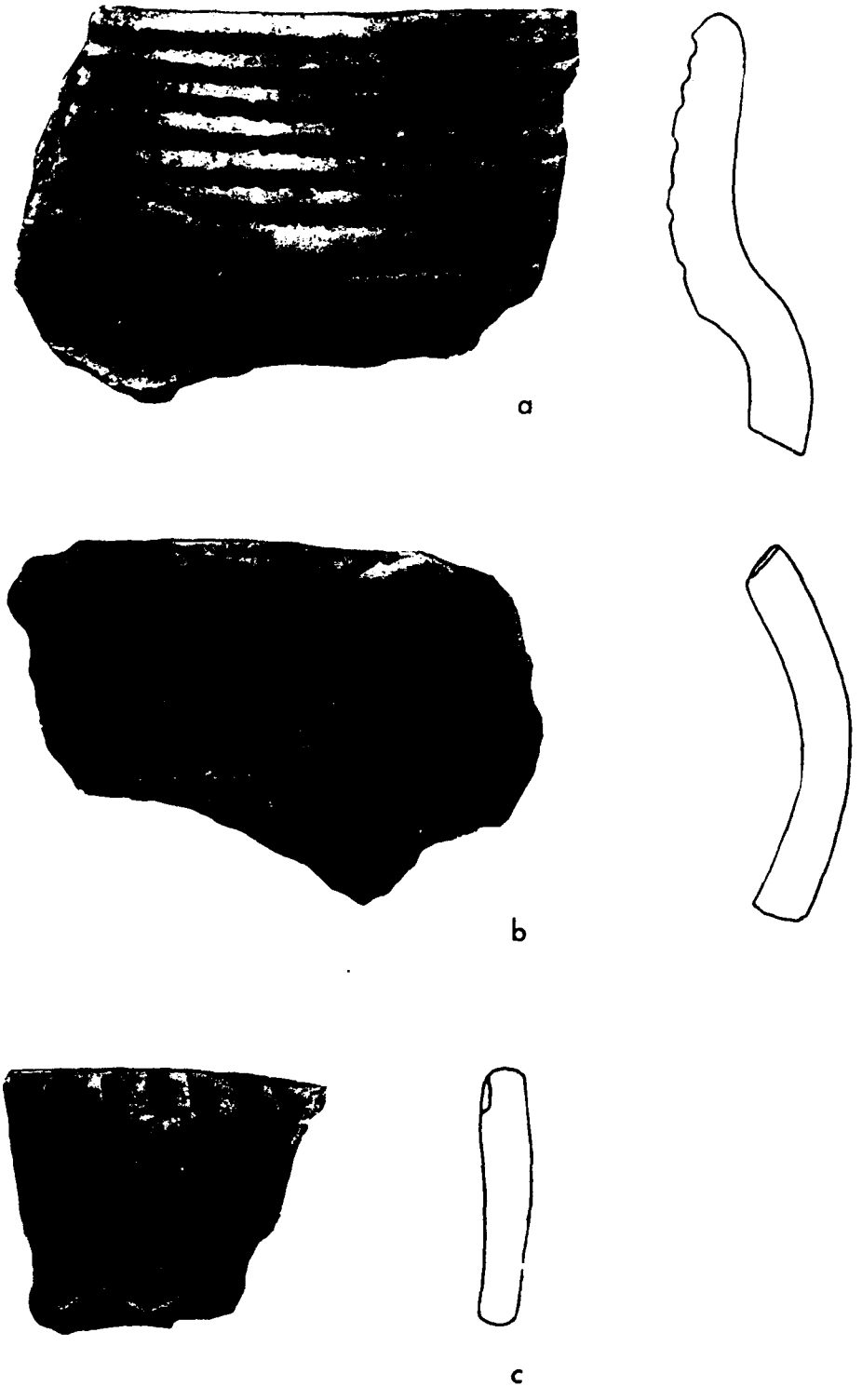


Figure 6.19. Rim sherds from 32SI101 (actual size).

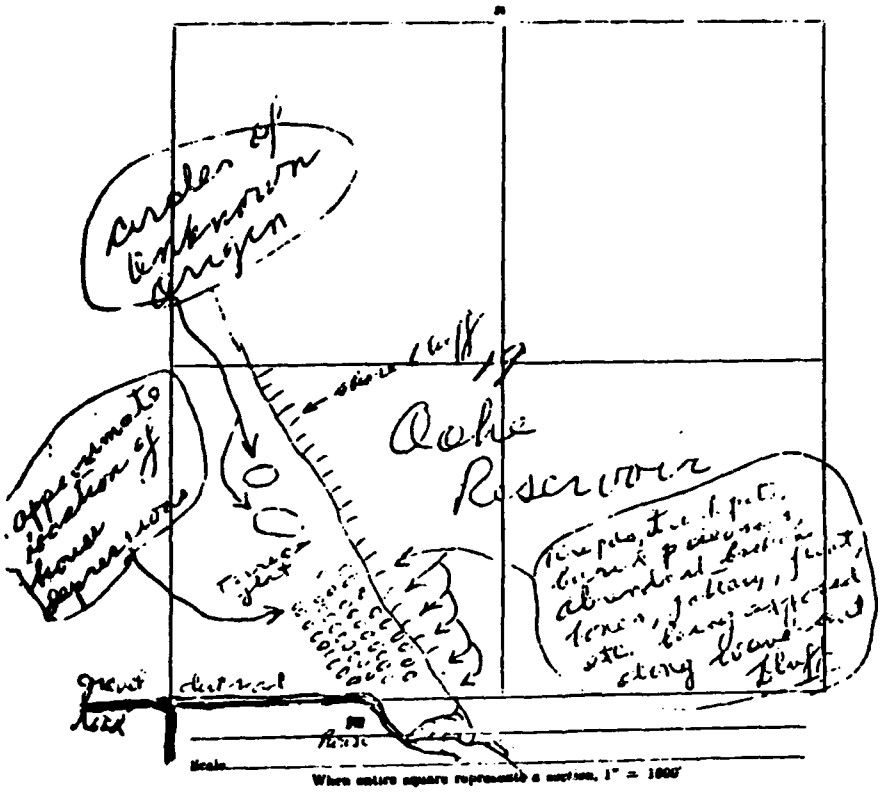


Figure 6.20. Sketch map of 32SI101 from Clayton site form.

possibility of a Cheyenne component within the site area. This site should be considered eligible for nomination to the National Register of Historic Places.

TOWNSHIP 130 NORTH, RANGE 80 WEST

32SI5

See Township 131N, Range 80W.

LT684-47IF

This isolated find is a military button with a raised shield probably dating from the mid to late nineteenth century (see Figure 6.15). The button has been badly damaged.

TOWNSHIP 131 NORTH, RANGE 79 WEST

32SI34

Two flakes were observed at this site. It is located in a cow trail and two track trail cut approximately 10 centimeters into the slope of a terrace just above a third order drainage (Figure 6.21). Site area is one square meter. One flake is manufactured from Knife River flint and one from grey Tongue River silicified sediment.

Vegetation at this site is predominantly a dense mixed grass prairie. The drainage is wooded with bur oak, American elm and green ash. The ground surface was only visible along the trail.

Although soil deposition is good, the exposure of only two flakes and the topographic setting indicates that the site has a low potential for containing additional significant cultural deposits. The site is not considered eligible for nomination to the National Register of Historic Places due to the low density and number of cultural materials and the lack of associated features or indications of buried cultural deposits.

32SI37

A prehistoric and historic component were recorded at 32SI37. A map of this site is presented as Figure 6.22. The prehistoric component consists of a very sparse scatter of Knife River flint debitage located on a gentle slope.

The site appears to have retained fair integrity despite some dispersion of materials as a result of slope wash. However, due to the

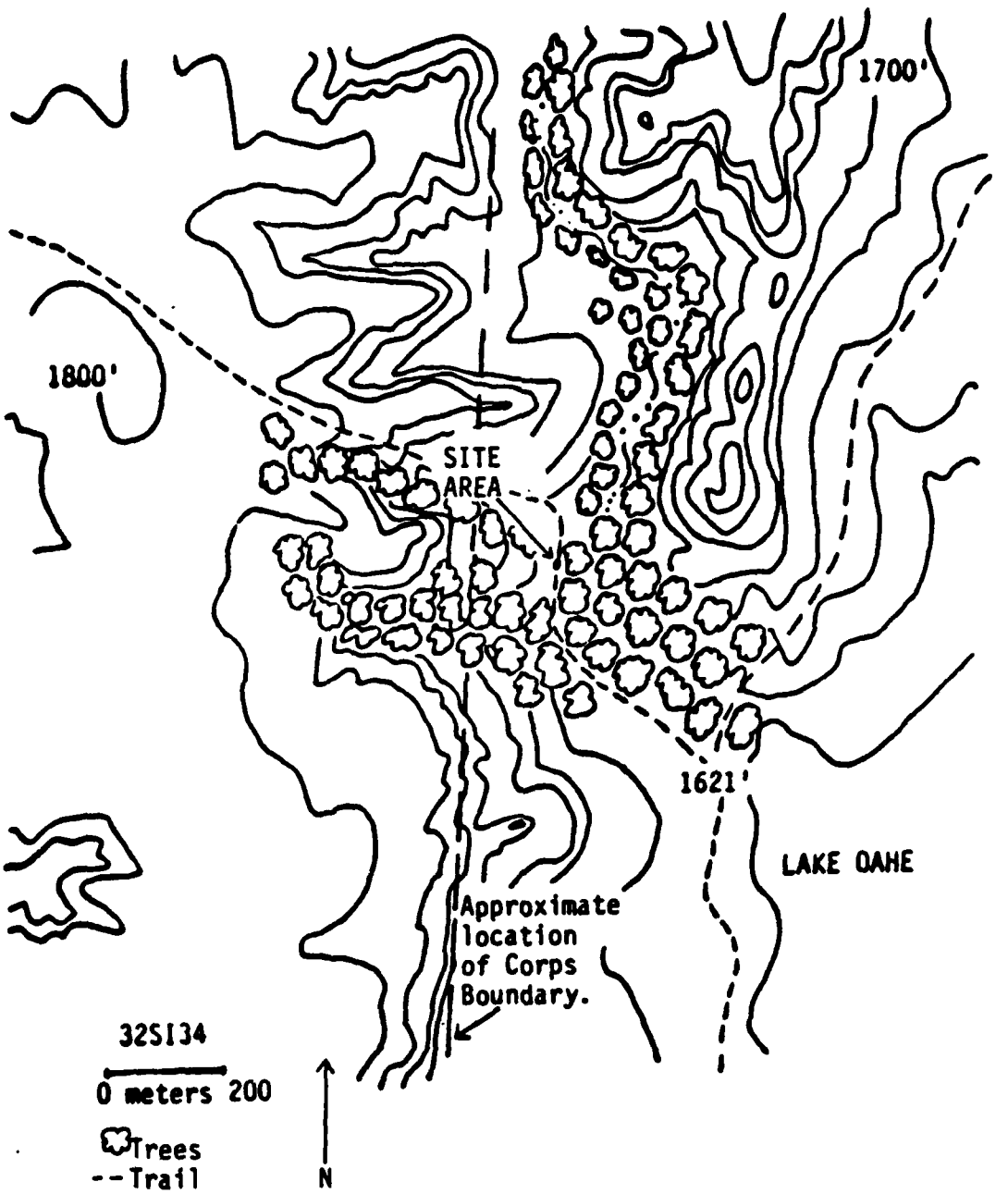
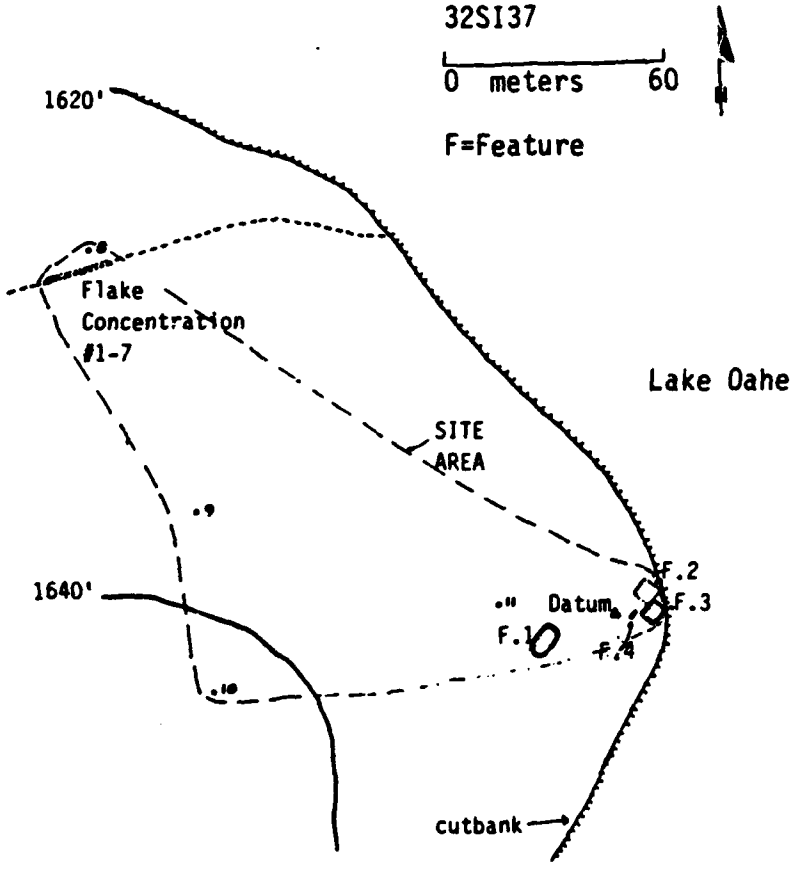


Figure 6.21. Map of 32SI34.



Corps boundary located approximately 225 meters west of site area.

Figure 6.22. Map of 32SI37.

paucity of artifactual materials and their extremely wide distribution (site area is 9000 square meters) the prehistoric component does not appear to have any further significant data recovery potential and is not believed to be eligible for nomination to the National Register of Historic Places.

The historic component of this site is an abandoned farmstead which now consists of three depressions and a fieldstone foundation. Artifactual material includes metal fragments, window glass, green glass, a Hylex jar, ceramic fragments, round wire nails, a metal bucket, iron stove fragments, a copper spoon, fieldstone fragments and a portion of an automobile body. All buildings have been removed. The eastern and northern ends of the site have been destroyed by inundation. Site area is 400 square meters. Artifactual material on this site indicates an occupation after 1890.

Vegetation consists of a mixed grass prairie with blue gramma dominant. The drainage located 100 meters to the north is wooded with bur oak, American elm, green ash and box elder. Visibility at the site was fair to good.

An 1893 General Land Office plat shows an occupation in this approximate area. The property was patented to Frank Gates on April 14, 1909. Subsequent owners have been: Nellie or Helen Two Bears, Mary Gates Zahn, Josephine Gates Kelly, John and Charles Albert Gates, Louis, Harry, Phoebe, Blanche Lenora Archambault, Louis Archambault Jr., and Mary Louise Archambault Whiteshield (1932, heirs at law of Frank Gates); Mary, Blanche, Lenora, and Louis Archambault Jr., Josephine Gates Kelly, John Gates, Mary Louise White Shield, and Phoebe Emmons (1935, heirs at law of Nellie Gates); and Standing Rock Sioux Tribe (1936, under Land Acquisition Program). The Missouri River Railway Company had a right of way (1906) past the site area.

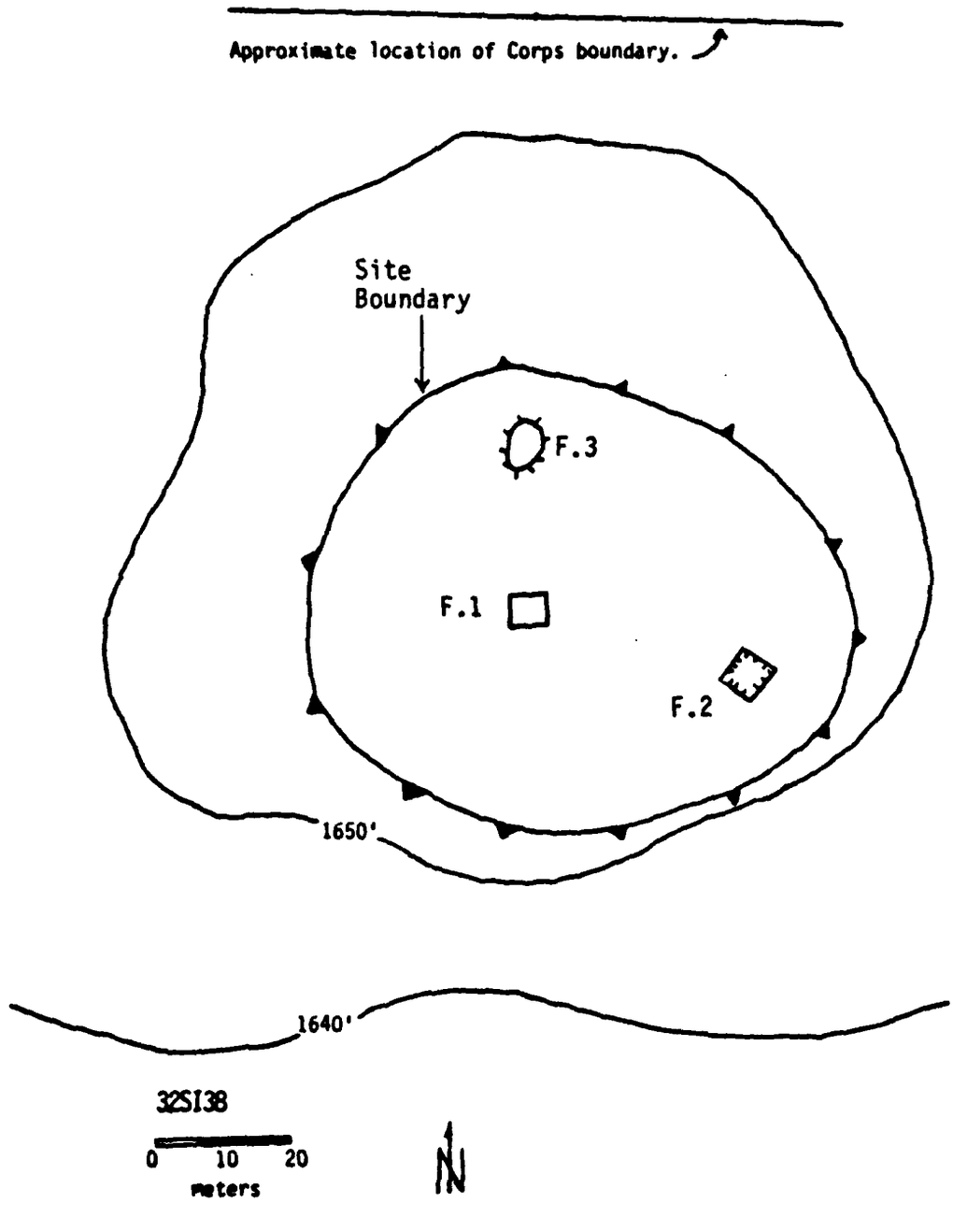
Josephine Gates Kelly was one of the first women elected to tribal office after the Indian Reorganization Act (Lawson 1982:69). She served for a time as the tribal chairman of the Standing Rock Sioux (Milligan 1976:170).

Further archival research and informant interviews should be conducted to establish the association of Josephine Gates Kelly and the family of Two Bears, Lower Yanktonai leader (Milligan 1976:170), to this site. Testing should be completed to establish the age and integrity of this site. Results of the testing, archival research and informant interviews should be evaluated prior to a determination of eligibility for nomination to the National Register of Historic Places.

32SI38

Site 32SI38 is an abandoned farmstead which now consists of a poured concrete foundation, a cellar depression, and a mound of earth (Figure 6.23). The poured concrete foundation may have been the base for a log building based on the cupping apparent in the foundation walls. Site area is 5200 square meters.

The site is located on a terrace above the Missouri River at an elevation of approximately 1640 feet. A seasonal drainage is located 600



Contours Approximate

Figure 6.23. Map of 32SI38.

meters from the site at an elevation of approximately 1640 feet. All structures have been removed and the site is heavily overgrown with native grasses. The site does not appear to have been otherwise disturbed since abandonment. The heavy vegetation on the site may obscure identification of other features and artifacts which could possibly allow better dating and evaluation of the site.

The property was allotted to Mrs. Yellow Bird or Foranwastewin (Cold Hand/Her Good Deeds) by trust patent of July 20, 1911. It was subsequently conveyed to Standing Rock Sioux Tribe (1939).

The short period of private ownership of this property may indicate occupation of the site between about 1906 and 1939, but a General Land Office plat of 1893 indicates an occupation in the close vicinity of this site at that date.

The significance of this site has not been determined. Testing and archival research should be conducted in order to determine the age, extent and function of this site.

LT684-32IF

This isolated find is a Knife River flint tertiary flake, size grade 3 (i.e., greater than or equal to one-half inch but less than one inch in size).

TOWNSHIP 131 NORTH, RANGE 80 WEST

32SI5, The Slab Town Site

The Slab Town site is an extremely large area containing both a prehistoric component and an abandoned historic community. The mapped site area is known to be at least 360,000 square meters. The exposed portions of the site area are on the beach of Lake Oahe, just above the 1620 foot elevation (Figure 6.24). Vegetation east of the known site area consists of cultivated hay fields and small clumps of cottonwood and willow.

The existence of a Plains Village occupation at the Slab Town site has been debated for a number of years. Wood (1971:64) summarizes the previous investigations dealing with the site:

> Another purported Cheyenne village is said to be about three kilometers below Porcupine Creek, also on the west side of the river... Many years ago, some Dakota built several log cabins here, the foundations for which significantly disturbed the surface contours of the area (Grinnell, 1923, vol 1, p.24; Will and Hecker, 1944, p. 89). Until about 1956, a YMCA mission house remained on the presumed site. Grinnell (1923, vol. 1, p. 28) feels it is possible that the locality was occupied for a time by the Cheyenne from a village on the Sheyenne River.

Figure 6.24. Portion of beach area at 32SI5.

This site (32SI5) was briefly investigated in 1956, when Alan R. Woolworth and I, conducting the State Historical Society of North Dakota's 1956 archeological program, worked in the Fort Yates area. The locality was again investigated by Scheans in 1957, but neither party recovered any material suggestive of a Cheyenne Indian occupation. The pottery which was recovered can be attributed to one or more prehistoric occupations in the locality.

Will and Hecker (1944:89) indicate that the majority of the sherds they recovered at the site were "Archaic Mandan." These authors also note that the Lewis and Clark Journal mentions a Cheyenne site at this locality.

While the collections of Ralph Thompson contain Plains Village materials from the Slab Town locality, the diagnostics recovered during the 1984 investigations are more indicative of Woodland. These include a cord roughened body sherd and the bases of two large corner-notched points. All of these materials were found on the beach in "area 1" of the site (the northern-most area illustrated in Figure 6.25; The southern-most area, or area 2 is also illustrated in Figure 6.25). Other prehistoric materials include debitage (predominantly of Knife River flint), a Knife River flint biface, one highly polished tibia from a large bird and one very small, smooth body sherd.

The observed prehistoric materials were all found on the beach area near the northern end of the site. They appear to have low integrity as a result of wave action. There is some likelihood of intact buried deposits back from eroded beach area.

The possibility that intact, buried prehistoric deposits are present at the site should be explored in conjunction with historic archeological testing. Until then, no statement of significance can be made.

The area was identified by Will and Hecker (1944:89) as a prehistoric site overlain by historic materials: "The Slab Town Site (Archaic Mandan)....This site covers about 15 acres with the entire surface obliterated by occupation of Sioux Indians of the Standing Rock Reservation. During the early days of the reservation several hundred shacks (small one to two room houses) were built of slabs from the local sawmills. This Indian village was called Slab Town and the Indians corrupted the name to 'Slob Town' due to difficulty in pronunciation. The YMCA maintained a mission here for a number of years and the site has been occupied occasionally by the people of the reservation during the past 60 years....This description probably referred to Area 1, which also was the location of a school shown on 1891 and 1894 Corps of Engineers maps and a Congregational church shown on a 1947 Corps map.

Based on informant information and a description of the area in God Giveth the Increase: The History of the Episcopal Church in North Dakota, the historic settlement of Slab Town is believed to be the same or possibly a portion of the Porcupine settlement. According to an informant, Porcupine was located approximately 20 minutes by foot from Fort Yates in the general direction of the location of this site. The informant stated that it was one of a group of communities that developed around the agency during the time that the Sioux were receiving rations. Another comparable

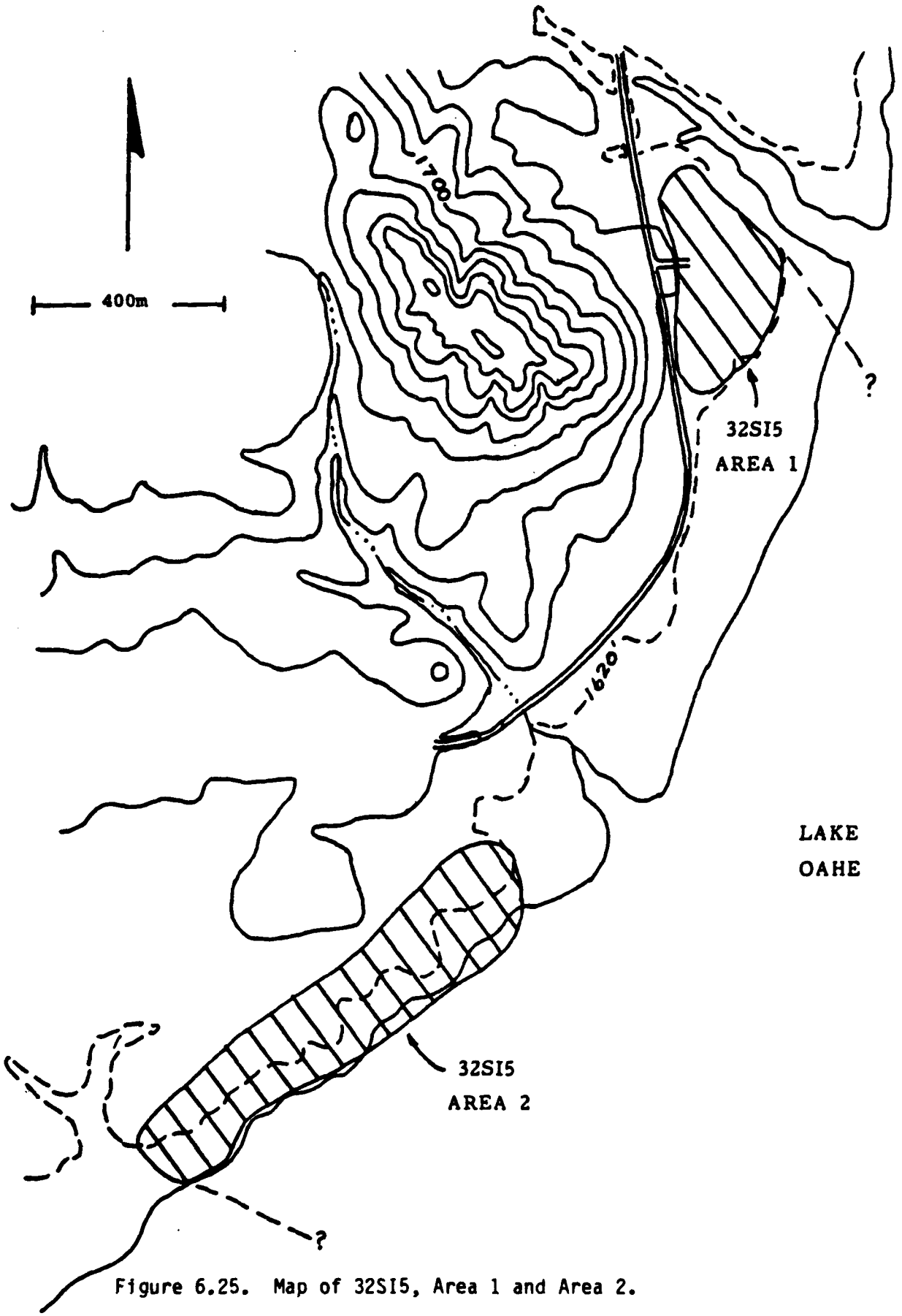


Figure 6.25. Map of 32SI5, Area 1 and Area 2.

community named by the informant is Shields. Shields is still in existence and is located just outside the boundary of the reservation. These communities were probably spread out over several miles. The Slab Town or Porcupine community evidences this spread in the two areas of the community identified archeologically.

The account from God Giveth the Increase indicates that Charles Prettyflute, a native lay reader, founded an Episcopal mission at Porcupine. While no date is given for the founding of this mission, other information in text indicates that it took place between 1880 and 1900 (Wilkins and Wilkins 1959:76). It may be presumed that the Porcupine community was well established by the time the mission was founded. Subsequent native lay readers at Porcupine were Alexander His-War and John S. Brown, who was described as "a half-breed Sioux catechist and postulant for orders from Cannonball" (Wilkins and Wilkins 1959:76). John S. Brown subsequently owned a portion of the area included in 32SI5 (see deed information).

Apparently the tenure of Alexander His-War and John S. Brown ended by the turn of the century. Wilkins and Wilkins (1959:76) state that "By 1900, one of Prettyflute's converts, Red Hail, became the leading figure in the group at Porcupine .... Red Hail, whose native name was Wasulatusa, had been present at the Custer massacre. He served in the United States Army as a scout for ten years and in the reservation police for eight years." While serving as an army scout in 1875, Red Hail and five other scouts were accused of selling liquor on the reservation by the Indian Agent, Burke (Milligan 1976:51). An additional reference to Red Hail suggests that the settlement at Porcupine may have been renamed Red Hail in his honor (Wilkins and Wilkins 1959:98).

The presence of the Protestant Episcopal Church at Porcupine is not in conflict with Will and Hecker's (1944:89) account of a YMCA at the Slab Town location. At the time the Protestant Episcopal Church would have been active in this area, it was closely associated with the YMCA (personal communication, Dwight Call, General Convention of Sioux Indian YMCA's, Dupree, South Dakota, 1986).

A portion of the site and the surrounding area was patented to John S. Brown on March 17, 1923. Subsequent owners have been: First State Bank of Fort Yates (1929), Clementine Holy Elk Face (1930), USA in trust for Clement Chapman (1954, by restrictive deed), and Marilyn Condon Snider (1974, patent). A portion was allotted to Medicine Stone by trust patent of December 6, 1917. Property was patented in fee by John S. Brown on March 17, 1923. Subsequent owners have been: Goodwin W. and Gus W. Hokanson (1925), Helen E., Elsie Mae, Susan Louise, Theodora, and Terence Calvin Kelly (1930); United States (1964). The Missouri River Railway Company had a right of way.

Another portion of the site and the surrounding area was reserved for Day School #2, Grand River on September 14, 1909. The property was subsequently reserved for the American Missionary Association, a body of the Congregational Church on June 20, 1921. The Missouri River Railway Company had a right of way (1906). A portion of the site and surrounding area was patented to William Jordan on October 5, 1917. Subsequent owners have been: Rosie Jordan (1924), and Wayne P. Jordan or Chapman (1946).

A portion of the site and the surrounding area was allotted to Bede (Frank) Loan Him Arrows by trust patent of December 21, 1908. Subsequent owners have been: United States in trust for Melda Redfox and Anthony Crows Breast (1948), and the Standing Rock Sioux Tribe (1950). A portion of the site and the surrounding area was patented by William Jordan on November 28, 1910. Subsequent owners have been: John M. Carignan and John A. Stiles (1911), Eva Stiles (1950, by county deed), and John Bruggman (1977, by quit claim deed from the Order of Saint Benedict, Stearns County, Minnesota).

A portion of the site and the surrounding area was patented to Medicine Ward on November 14, 1919. Subsequent owners have been: Raymond B. Luger (1946, limited deed from Federal Land Bank of St. Paul) and United States, (condemnation). A portion of the site and the surrounding area was patented to Medicine Ward on November 14, 1919. Raymond B. Luger obtained the property in 1946 by limited deed from the Federal Land Bank of St. Paul.

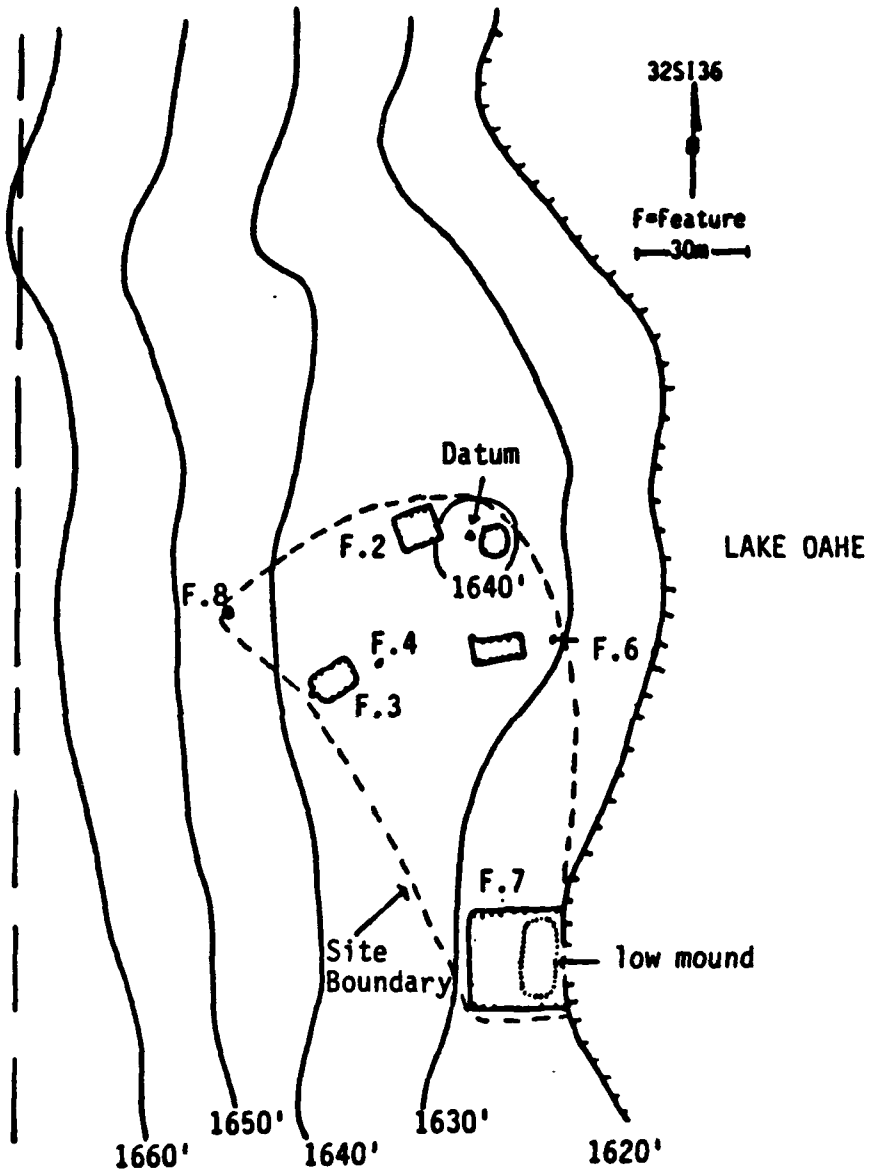
Goodwin William Hokanson was born at Balley City, Dakota Territory in 1882. In 1908 he moved to Fort Yates to clerk in the Wickham Mercantile Company. In 1914 Goodwin, his brother Gus, and the two Turner brothers bought the store and ran it under the name of Hokanson and Turner. In 1923, the two Turner brothers retired and the store became the Hokanson Mercantile Company. The Hokanson Mercantile Company was licensed as an Indian trader under bond to the Federal government. The Hokanson brothers owned a large amount of farm property in Sioux County and probably did not occupy this site at any time.

The historical component of the site appears to have very high likelihood to yield important information about material cultural change of the Indian residents just prior to the reservation period and during the early reservation period, roughly 1860 to 1930. The site has yielded an unusually large and diverse collection of artifacts representing economic, religious, social and technological aspects of the reservation period culture. Excavation and analysis of subsurface deposits could significantly extend knowledge of this period and of the dynamics of acculturation.

32SI36

An abandoned apparent farmstead now consisting of seven depressions, the standing remains of a storm cellar or root cellar, and a cultural material scatter, was recorded at this location (Figure 6.26). Site area encompasses approximately 12,000 square meters. All other buildings have been removed and a portion of the site may have been lost through frequent inundation by Lake Oahe. This site appears to be a ca. 1900-1950 farmstead.

The site is located immediately adjacent to the cutbank above Battle Creek. Vegetation is dominantly mixed grasses. Visibility was poor at the time the site was recorded. The site is at an elevation of approximately 1630 to 1640 feet. Battle Creek, at an elevation of 1620 feet, is located 30 meters from the site boundary.



Approximate location of Corps boundary.

Figure 6.26. Map of 32SI36.

The property was allotted to Herbert Buffaloboy by trust patent of December 21, 1908. Subsequent owners have been: Mrs. Josie Buffaloboy (1913, by restrictive deed); Elizabeth W. Claymore (1947); Charles Dunn (1949); George Herbert Dunn (1956, by will); Margaret Partain, Raymond Charles, David Louis, George Herbert Dunn and Lonna M. Gipp (1966, by will of George H. Dunn); and Renee Yellow, James Richard, Geraldine Michelle, and George Herbert Dunn, III (1977, by will of George Herbert Dunn, Jr.).

This site retains fair integrity and there is a potential for intact subsurface cultural deposits. None of the persons associated with the title history appear to have been particularly important in history. The remains of the storm/root cellar are distinctive in that few such structures remain in the area. Because the site may yield additional information, it should be evaluated to determine significance after development of a context for the evaluation of nineteenth and twentieth century reservation sites.

32SI40

A prehistoric and historic component are present at 32SI40 (Figure 6.27). The site is located on a terrace above the Missouri River. Site area is 3888 square meters. As a result of the dense cover of mixed grasses, visibility at the site was poor. An unnamed seasonal drainage is located 400 meters away at an elevation of approximately 1620 feet. The site is located at an elevation of 1640 feet.

The prehistoric component consists of a dispersed scatter containing small concentrations of lithics and mammal bone. A Knife River flint biface fragment was collected from the surface.

Prehistoric cultural material concentrations may indicate the presence of intact subsurface cultural materials. There is considerable soil deposition in the central area of the site as indicated by exposures in the cutbank and the plowed furrow. In this area, there may be in situ cultural materials buried as deeply as one meter. Testing is recommended in order to determine the prehistoric component's age, integrity, function, and significance.

The historic component of this site may represent the physical remains of a mission church and an allotment homestead (see below). The site consists of a semi-circular depression, the remains of a dugout or storm cellar, a well, an outhouse, and a cultural material scatter. All structures have been removed and a portion of the site has eroded into Lake Oahe.

This property was temporarily reserved for mission purposes of the Protestant Episcopal Church on December 17, 1918. Subsequently, allotments of approximately two acres each were made to the following individuals: Austin and Rose Wise Spirit (1926), Eagle Nation and Josephine Eagle Nation (1926), Mabel Snow (1926), Bravebull (1926), Rosa Graydog (1926), Thomas Kiddy Jr. (1942) and Joseph Ramses (1943).

An 1893 General Land Office survey plat indicates an occupation in the close vicinity of this site. A 1947 Corps of Engineers map indicates a

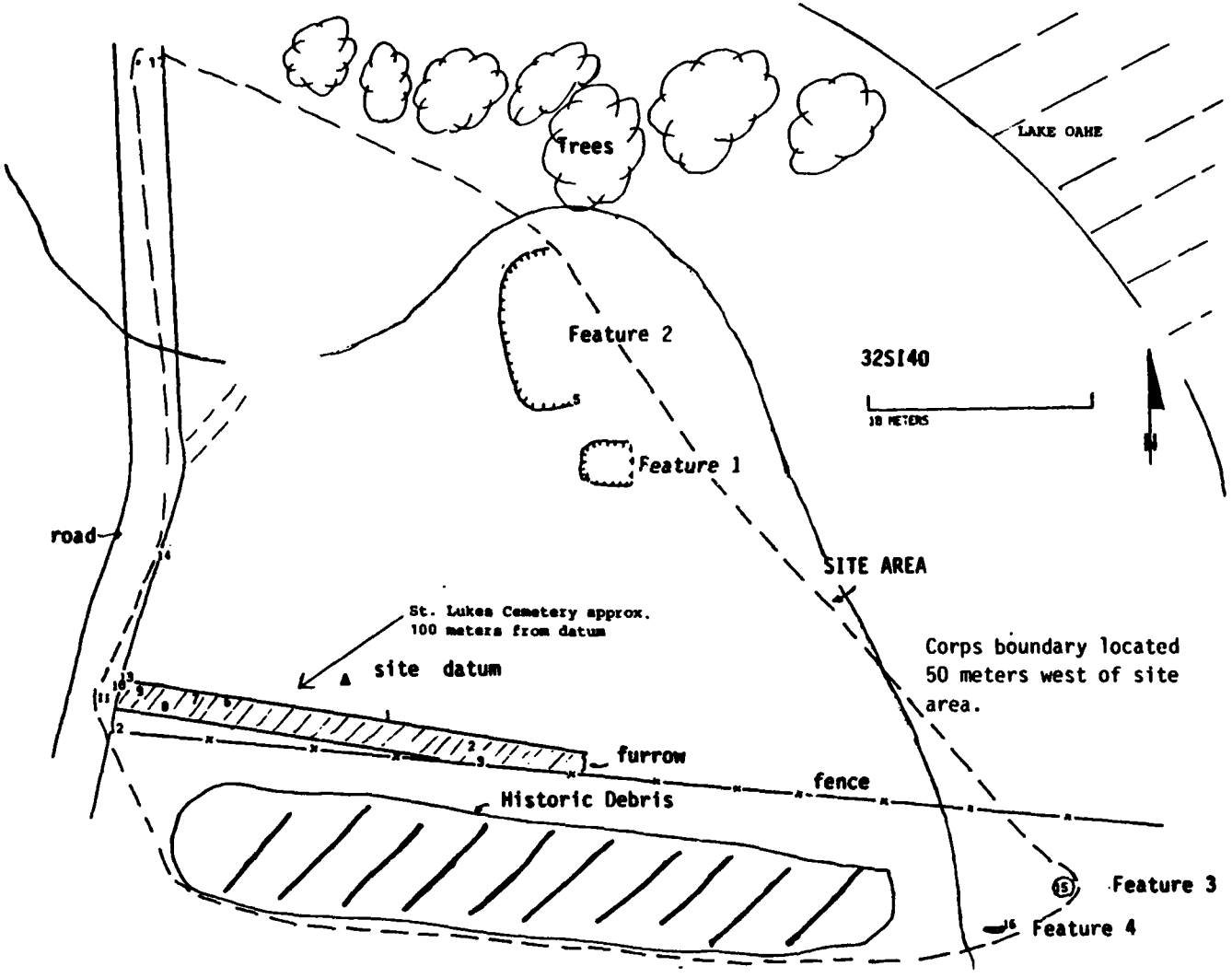


Figure 6.27. Map of 39SI40.

church and other buildings at or near this site. Further archival research and informant interviews should be conducted to establish the connection of this site with the Slab Town community (32SI5) prior to a determination of National Register eligibility.

32SI51

The site consists of a buried fire hearth in a paleosol approximately two meters below the present ground surface. The level is exposed in the cutbank on the north side of Porcupine Creek Bay (Figure 6.28). The paleosol containing the hearth extends for a least 100 meters along the cutbank, but it is unknown how extensive the cultural component in this buried soil is. A map of this site is presented in Figure 6.29.

The hearth does not appear to contain fire-cracked rock. It is basin-shaped and is estimated to be approximately 30 centimeters wide and 20 centimeters deep. Large pieces of charcoal are visible protruding out from the edge of the feature.

The integrity of this site cannot be determined without testing. If intact buried deposits can be found at this location, the site could be highly significant. Testing is recommended in order to determine this site's age and eligibility for nomination to the National Register of Historic Places.

32SI56

A prehistoric and an historic component were recorded at this site (Figure 6.30). Area of the prehistoric component is at 16,400 square meters. Area of the historic component is 4000 square meters. The site extends along the northeast and southwest slopes of a finger ridge which is part of a terrace system on the west side of Lake Oahe. Deposition on the site is generally thin, especially on the steeper slopes.

Visibility in the site area ranged from poor to good. The site is in mixed grass prairie. Elevation of the site varies from approximately 1630 feet to approximately 1680 feet. A seasonal drainage, located 60 meters from the site, is at an elevation of 1620 feet.

The prehistoric component consists of a sparse cultural material scatter. Cultural material observed on the surface of the site includes lithic debitage, two unifacially flaked tools, two end scrapers and one simple stamped body sherd.

Integrity of the prehistoric component appears to range from poor to fair, as slope wash and road cuts have destroyed much of the site. However, two concentrations were located which may contain intact subsurface deposits. The significance of the prehistoric component is not known. Test excavations are recommended in order to determine the presence or absence of buried cultural deposits and assess their significance prior to a determination of eligibility for nomination to the National Register of Historic Places.

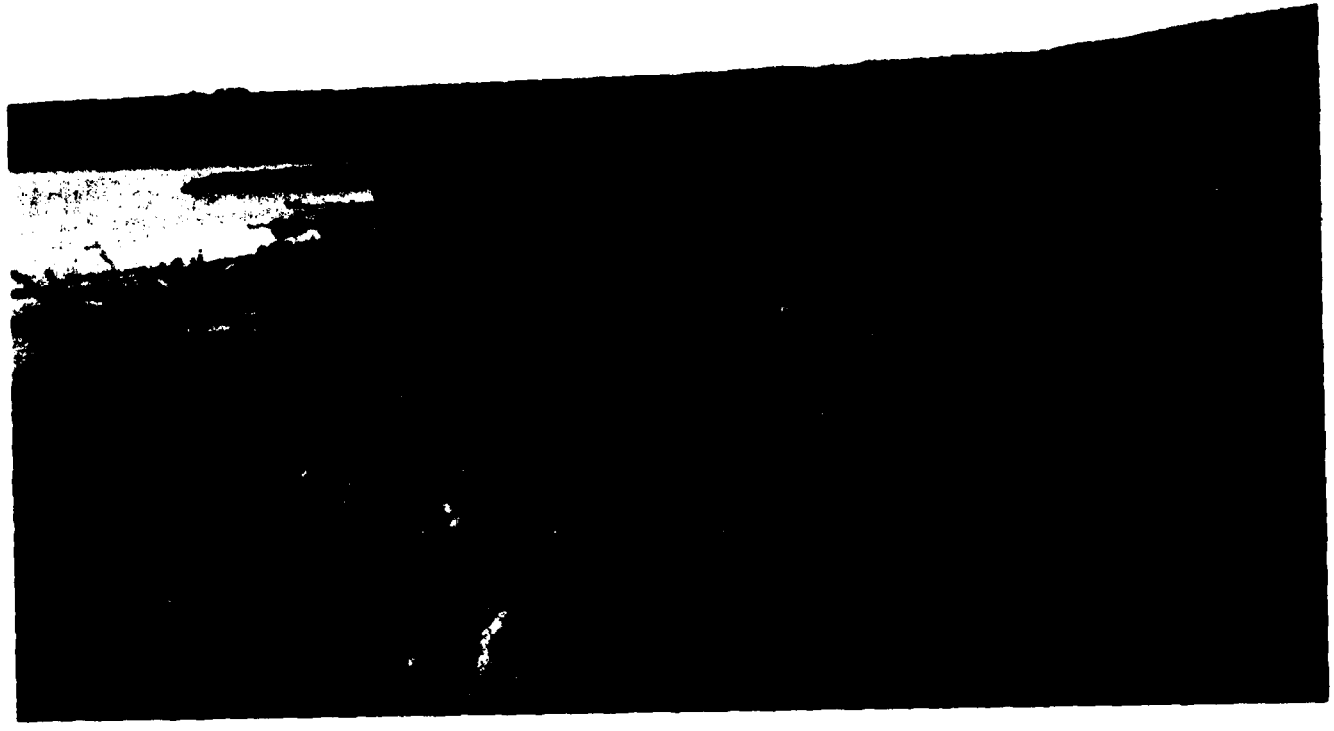


Figure 6.28. Cutbank containing feature recorded as 32SI51.

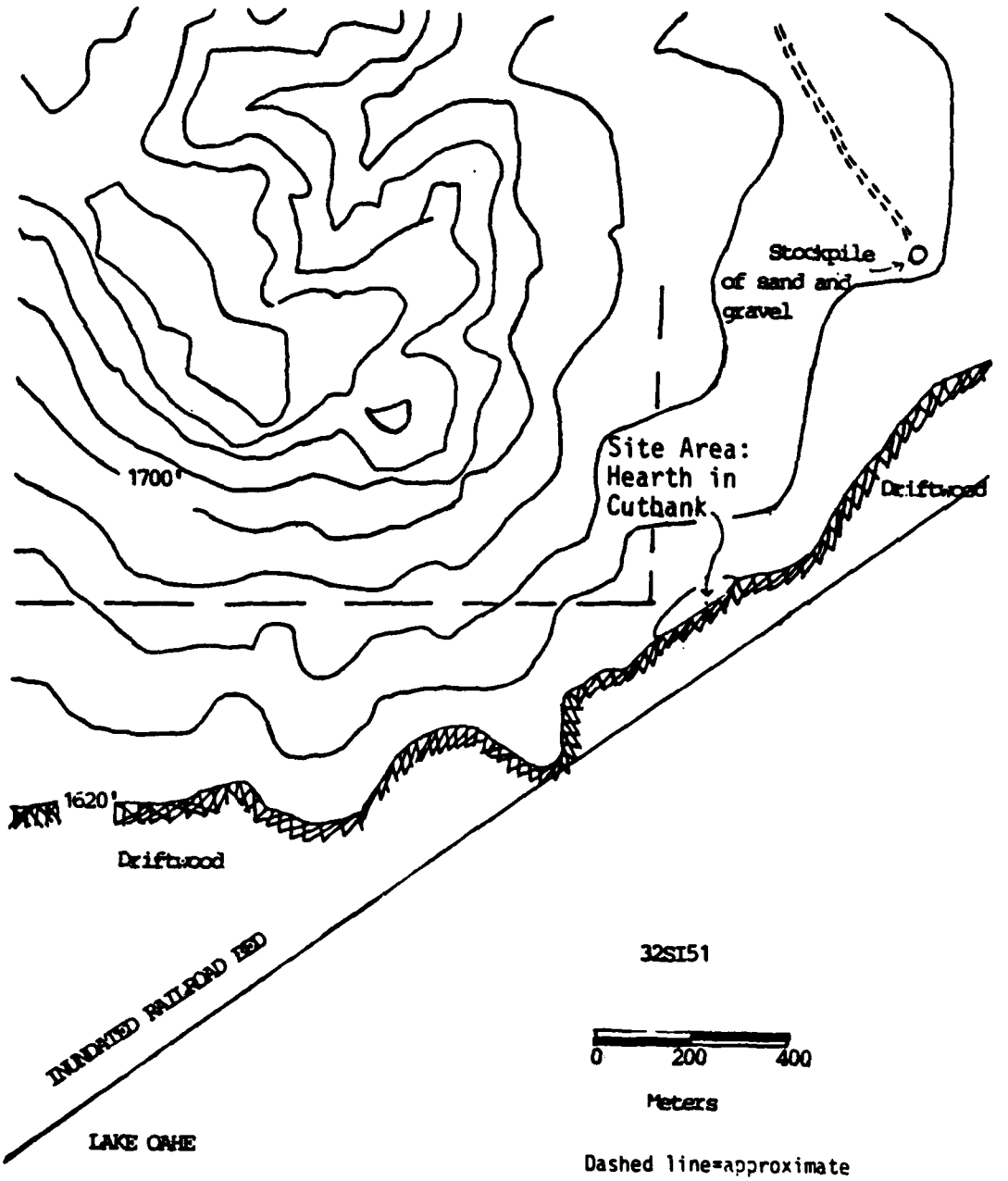


Figure 6.29. Map of 32SI51.

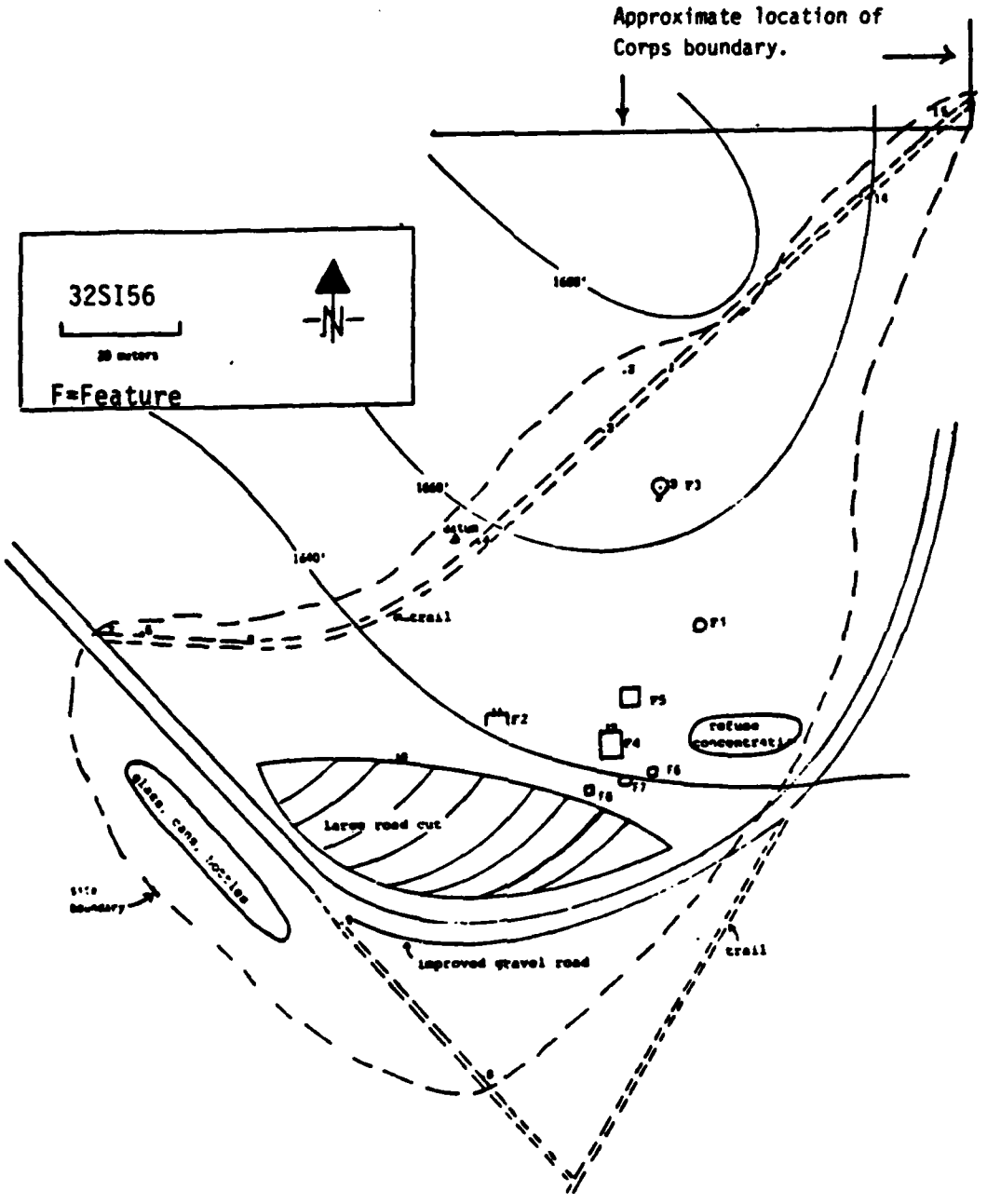


Figure 6.30. Map of 32SI56.

The historic component at this site consists of a standing log structure (Figure 6.31), a foundation, an intact semi-subterranean cellar depression, at least two other depressions, and a cultural material scatter. The log cabin was constructed using square cut corners joining and round wire nails. The cabin has a gable roof. Exterior dimensions of the cabin are 4.2 x 3.3 meters. The facade is facing south. The cultural material scatter is comprised of artifacts believed to be recent in age. Generally, these include tables, window frames, machine parts, modern cans, a galvanized washtub, metal fragments and cut lumber. The site is probably an allotment homestead dating sometime after 1920.

The property was temporarily reserved for mission purposes of the Protestant Episcopal Church by the Secretary of Interior on December 17, 1918. Subsequently a number of allotments of approximately two acres each were made to: Austin and Rose Wise Spirit; Eagle Nation and Josephine Eagle Nation; Mabel Snow; Bravebull; Rosa Graydog (all December 13, 1926); Thomas Kiddy Jr., (March 23, 1942) and Joseph Ramses (March 13, 1943).

The architecture of the standing structure is not outstanding, and the construction of the intact storm/root cellar also does not appear to be particularly distinctive. However, archival research should be conducted to determine this site's connection to Slab Town (32SI5). This site should be evaluated to determine significance after development of a context for the evaluation of early twentieth century reservation sites.

LT684-38IF

This isolated find is a Knife River flint tertiary flake, size grade 3 (i.e., greater than or equal to one-half inch but less than one inch in size).

TOWNSHIP 132 NORTH, RANGE 79 WEST

32SI35

This site is an abandoned farmstead which consists of a poured concrete foundation with a cellar, four other cellar depressions, and a scatter of domestic artifacts (Figure 6.32). Site area is 10,000 square meters. All buildings have been removed, but the site surface has apparently not been disturbed since the site was abandoned, except for some apparent erosion by the lake. This site appears to be a post-1920 farmstead but an 1894 General Land Office survey plat indicates an occupation of this area at that date. The site was probably occupied until at least the mid-1950s.

The site is located on a small hill at an elevation of approximately 1630 feet. The eastern boundary of the site is immediately adjacent to the cutbank of Lake Oahe. An unnamed seasonal drainage is located immediately adjacent to the western boundary of the site at an elevation of 1620 feet. Vegetation includes mixed grasses, trees and shrubs. Visibility was poor at the time the site was recorded.

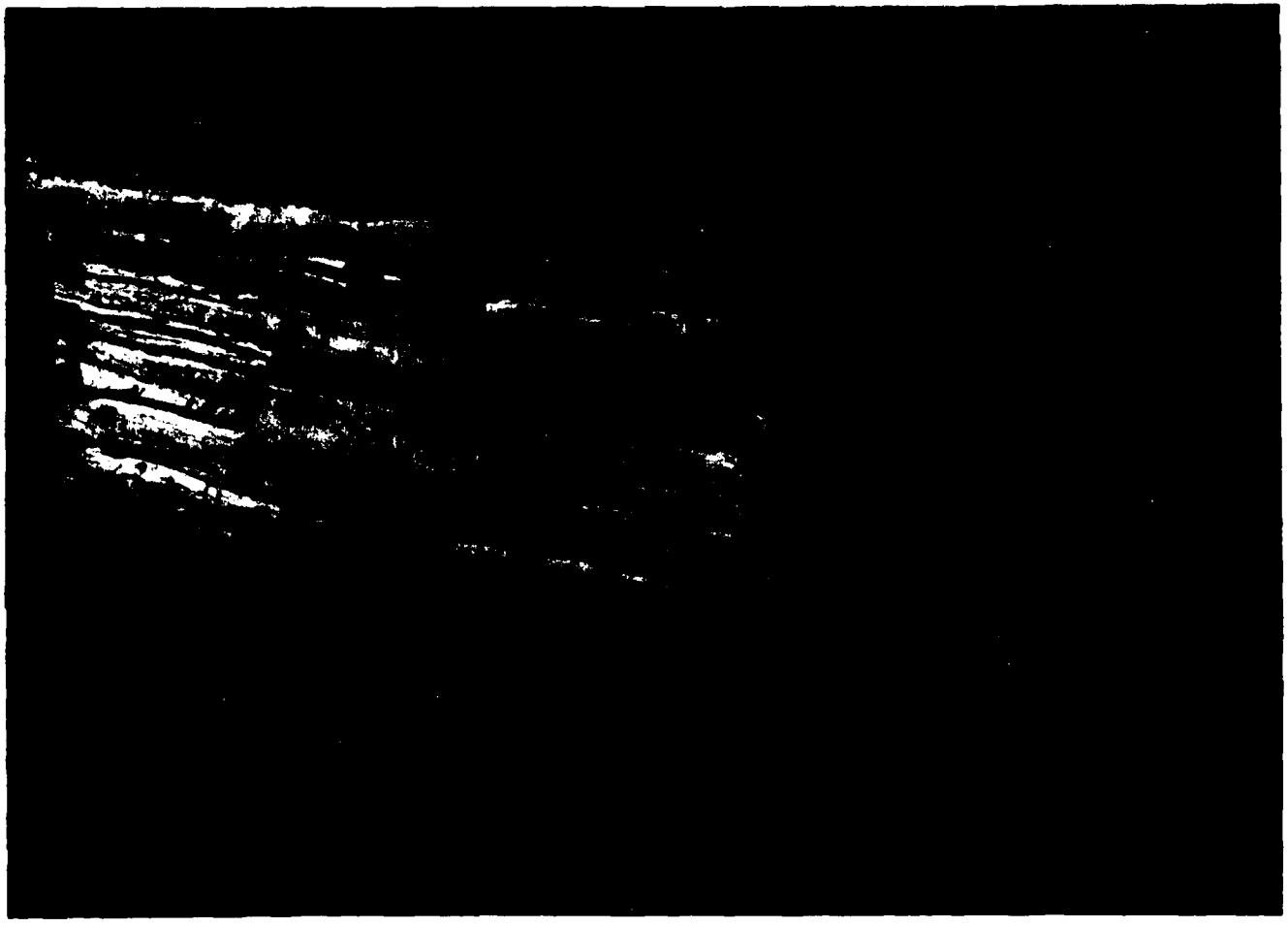


Figure 6.31. Standing log structure at 32SI56.

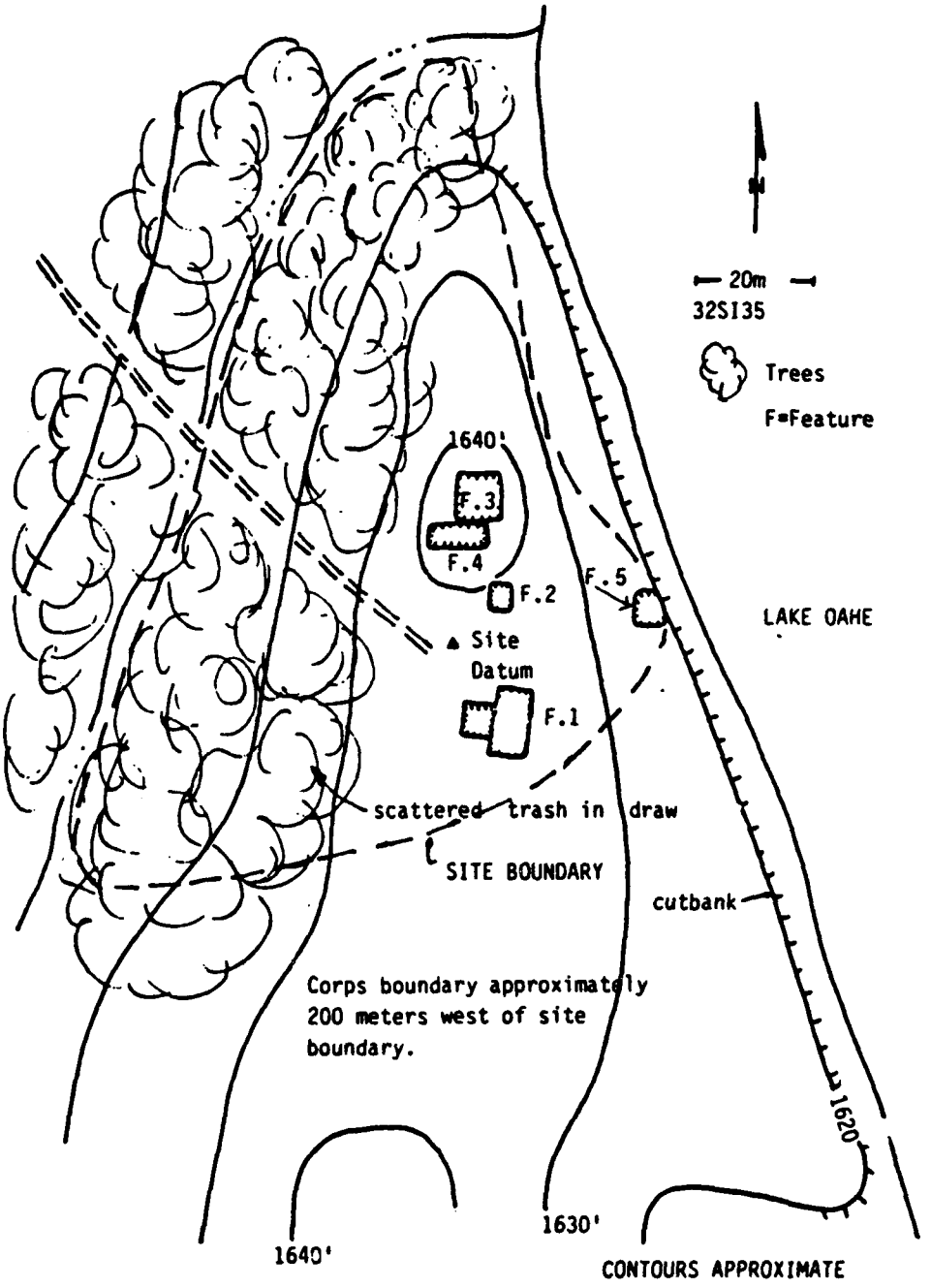


Figure 6.32. Map of 32SI35.

The property was patented to Asa Little Crow on November 21, 1919. Subsequently, it was conveyed to United States in trust for the Standing Rock Sioux Tribe (1948).

The site retains fair integrity. It should be evaluated after the development of a context for the evaluation of nineteenth and early twentieth century reservation sites.

LT684-25IF

This isolated find is a Knife River flint tertiary flake, size grade 2 (i.e., greater than or equal to one-quarter inch but less than one-half inch in size).

LT684-28IF

This isolated find is a Knife River flint tertiary flake, size grade 3 (i.e., greater than or equal to one-half inch but less than one inch in size).

LT684-52IF

This isolated find consists of several mammal bone fragments exposed in a two track road. The fragments appear to be from a single individual.

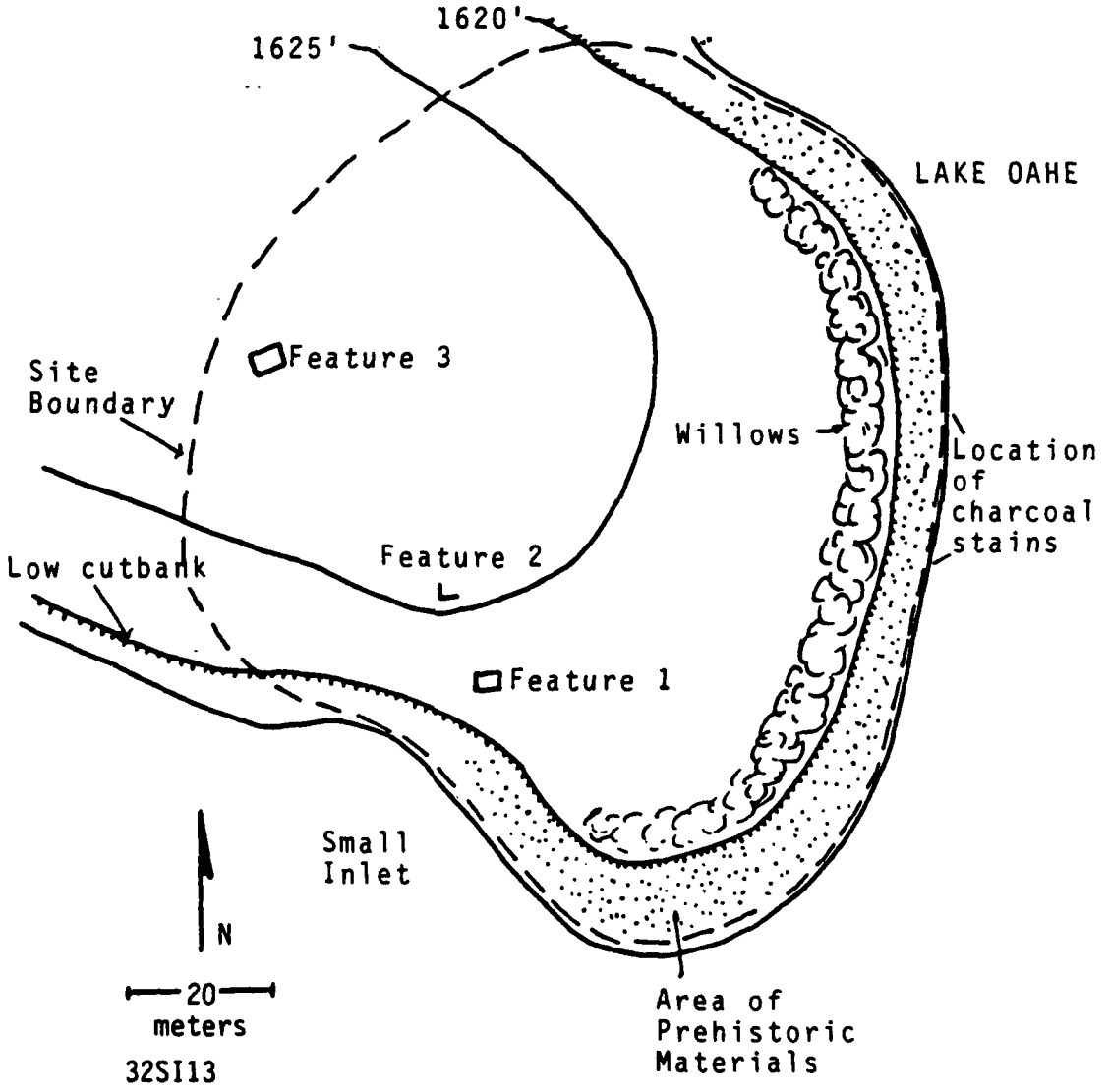
TOWNSHIP 133 NORTH, RANGE 79 WEST

32SI13, Bede Uses His Arrow Site

The Bede Uses His Arrow site contains both a prehistoric and a historic component (Figure 6.33). The site area is 15,600 square meters. Site elevation is approximately 1625 feet. It is located on the north side of a small bay formed by an intermittent tributary. The original creek bed was approximately one hundred meters south of the site location. Vegetation on the site consists of mixed prairie grasses and a band of willows along the edge of Lake Oahe. Ground visibility was good at the time the site was investigated.

The Bede Uses His Arrow site, 32SI13, was originally described by Will and Hecker (1944:91):

> The site covers an area of about 10 acres, and has been under cultivation and in the ranch yard of the owner. Little shows on the surface except the usual village refuse. The Indian who lives here (Bede Uses His Arrow) states that he had dug into lodge floors and cache pits while constructing fences and buildings. The potsherds are of the Archaic Mandan types.



Corps boundary located approximately 300 meters west of the southern edge of the site boundary.

Figure 6.33. Map of 32SI113, Bede Uses His Arrow Site.

Prehistoric cultural materials at 32SI13 were found scattered along a bend in the beach, at the juncture of the small bay with Lake Oahe (Figure 6.34). Materials observed consist of ceramics, lithics of Knife River flint, fire-cracked rock, and bison bone. All rim sherds examined appear to be Riggs Plain (Figure 6.35a-c) and Riggs Decorated Lip (Figure 6.35d). Although the remains of several small hearth features were observed in the beach sediments, no lodge features or cache pits were observable.

The prehistoric portion of 32SI13 should be tested to determine if there are intact deposits present from the village occupation back from the beach area. This will probably require testing to at least one meter below the present ground surface since there appears to be extensive deposition over the cultural level. The artifactual materials on the beach appear to be highly reworked by wave action.

The historic component of 32SI13 is the abandoned Uses His Arrows farmstead. The site consists of three poured concrete foundations on the uneroded area of the site and an extensive scatter of historic debris on the beach of Lake Oahe. Artifacts include a glass candy container (Figure 6.35e), bottle glass (Figure 6.35f), ceramics, leather, tin cans and saw-cut bone. The artifacts indicate a dating range of ca. 1885 to 1945. The historic materials appear to retain very low integrity. All structures have been removed and at least some of the foundations have been disturbed.

The property was alloted to Bede Uses His Arrows (Wankicum) by trust patent of December 21, 1908. Subsequent owners have been: Evan Uses Arrows (1948, by will); and Louise Grindstone Uses His Arrows (1949, heir at law).

None of the persons associated with the site appear to have been particularly prominent in local, state or national history and archival sources do not indicate other possible historical significance for the site. The historical component of 32SI13 is therefore not believed to be eligible for nomination to the National Register of Historic Places and no further research is recommended.

32SI16

Site 32SI16 is situated on either side of a small coulee at an elevation of approximately 1680 feet. Site area is 90,000 square meters. Vegetation consists of mixed prairie grasses with stands of cottonwood in the valley along the north edge of the site. Visibility at the time of inventory was moderately good. An intermittent stream channel is present in the valley approximately 100 meters north of the site.

The prehistoric component of 32SI16 is believed to be the location of a site previously visited and described by Will and Hecker (1944:92):

> A Probable Site...Considerable evidence of the village site shows in potsherds, flint spalls, burnt stones, bones, but some testing would be necessary to determine if lodges once existed. The surface is eroded level and refuse shows only along the terrace edge not affected by soil accumulation. The potsherds are of the

Figure 6.34. Beach area at 32S113.

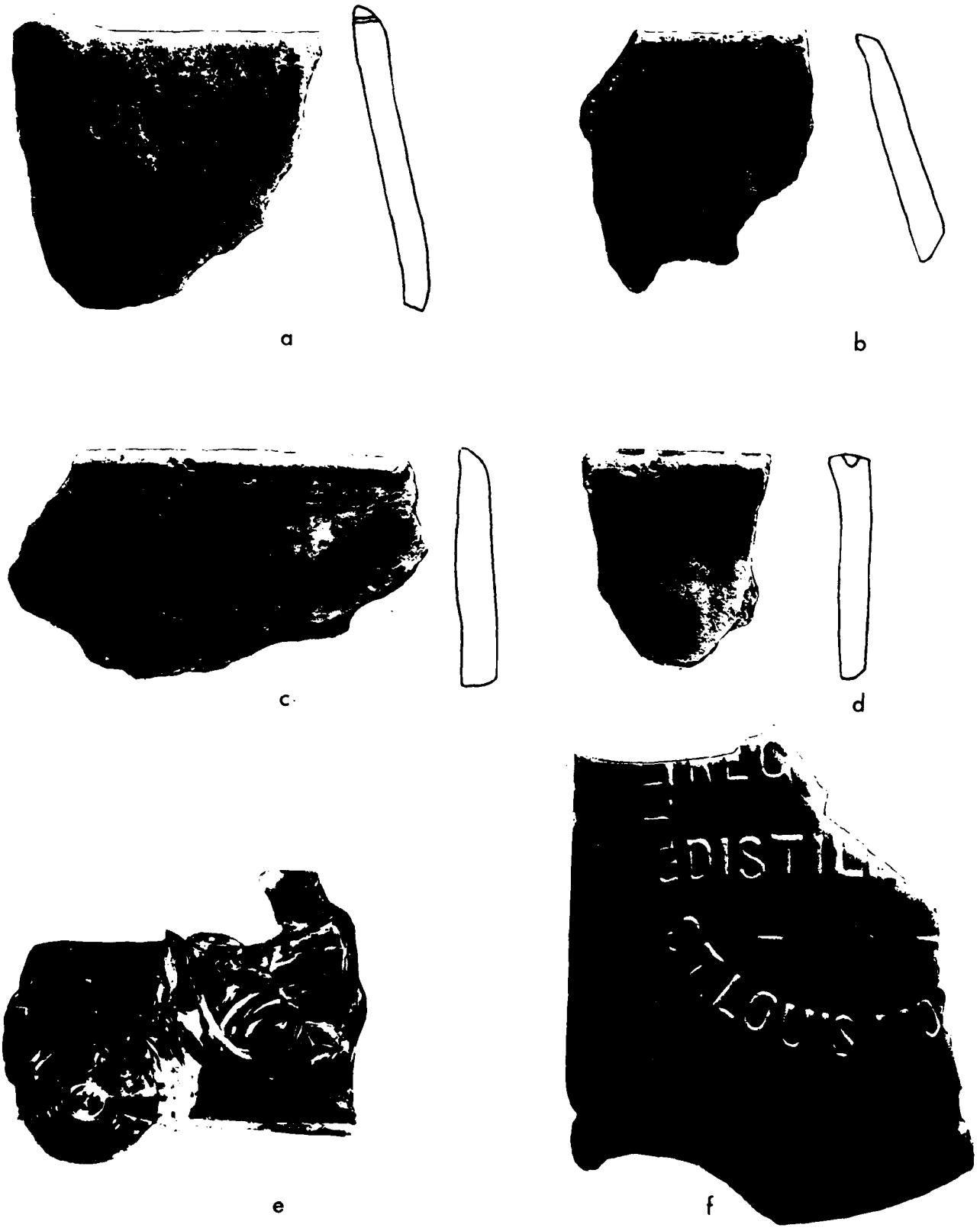


Figure 6.35. Artifacts from 32SI13 (actual size).

Archaic Mandan types.

Their description varies somewhat, however, from what the 1984 survey crew found. This could be due to the present lack of cultivation on the site. The site appears to be a large unfortified village with what may be cache pits and lodge depressions (approximately 50) visible in the prairie sod (Figure 6.36). A photograph of one of the depressions is presented in Figure 6.37. Other than a small scatter of bone near the south bank of the coulee which splits the two portions of the site, no other potential cultural material was observed.

Two possible features were shovel tested to a depth of approximately was screened through ¼ inch mesh. No profiles were drawn due to the lack of recognizable stratigraphy. Although no cultural materials could be found in the two shovel tests, there is the possibility that the site has very good cultural integrity. This can only be determined through more detailed testing of a number of areas of the site. This site should be tested in order to determine its nature and eligibility for nomination to the National Register of Historic Places.

The origin and function of the historic component at 32SI16 has not been determined but the features appear to be consistent with occupation of an allotment farmstead. At least two of the depressions on the site appear to be historic in origin. Historic artifactual material observed on the surface included cut bone, clear bottle glass, scrap metal and modern beer cans.

The property was alloted to Moccasin Necklace by trust patent of January 11, 1910. Subsequent owners have been: Wamblewin, or Mrs. Moccasin Necklace, (1920); and Henry Conica (1932). Several buildings are shown in the general vicinity of 32SI16 on the 1893 General Land Office survey plat.

The integrity of the historical component is unknown. Archeological testing of the historical features is recommended in conjunction with the proposed testing of the prehistoric component.

32SI30

Vegetation at this site includes needle-and-thread, blue gramma and western wheatgrass. In the valley to the north bur oak, plum and a grassland of big bluestem, little bluestem and porcupine grass were observed. Visibility was poor to fair. A unnamed seasonal drainage borders the site. Elevation at the site varies from approximately 1630 feet to over 1680 feet. The drainage intersects the site at an elevation of approximately 1640 feet. A map of this site is presented in Figure 6.38).

The prehistoric component of this site consists of a small lithic scatter with some small bone fragments exposed in the ruts of the two track road on the side of a terrace. Site area is 500 meters square. Cultural materials are only exposed in the two track road and appear at a depth of less than 10 centimeters. Cultural material is very sparse and may have been displaced by slope wash.

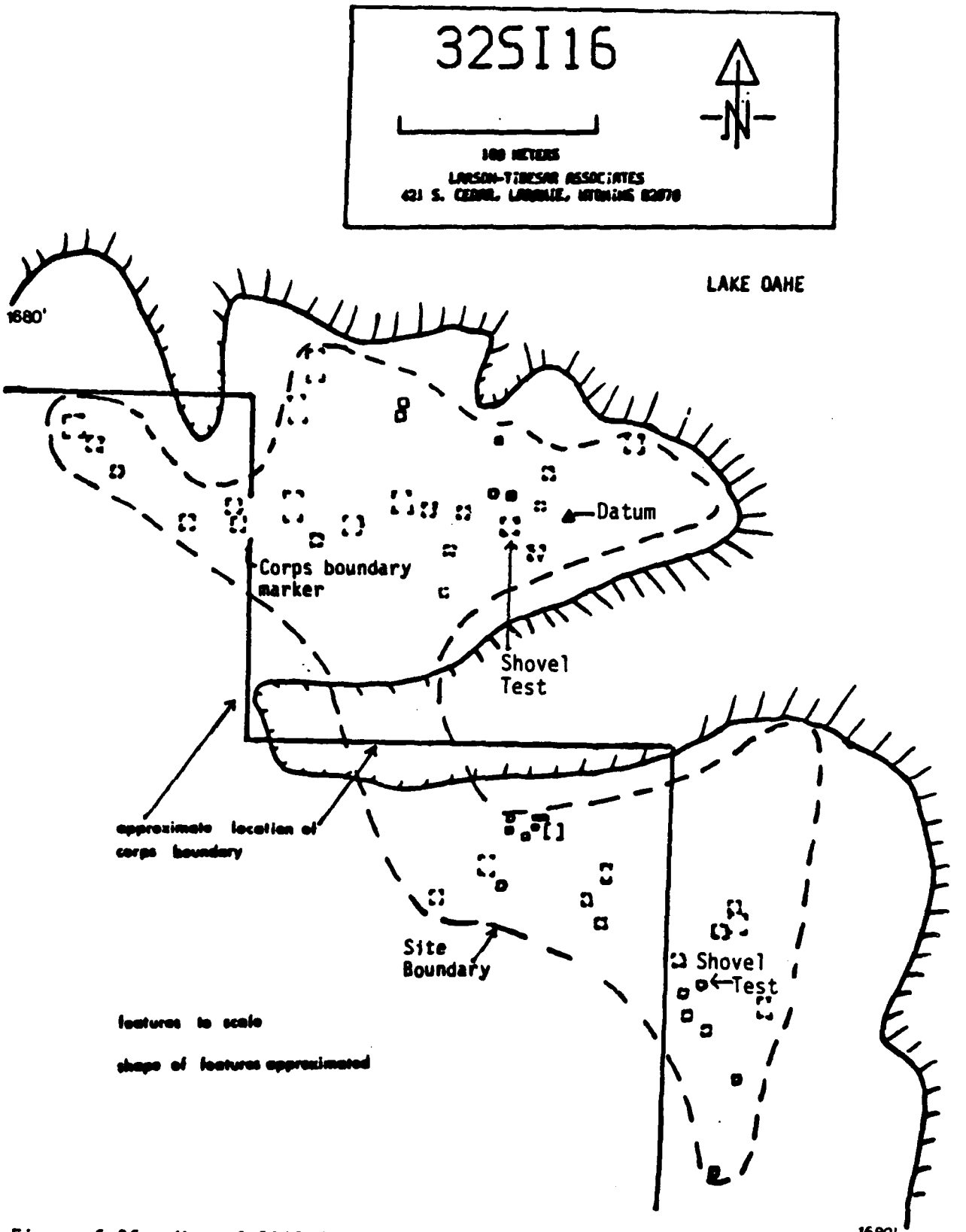


Figure 6.36. Map of 32SI16.

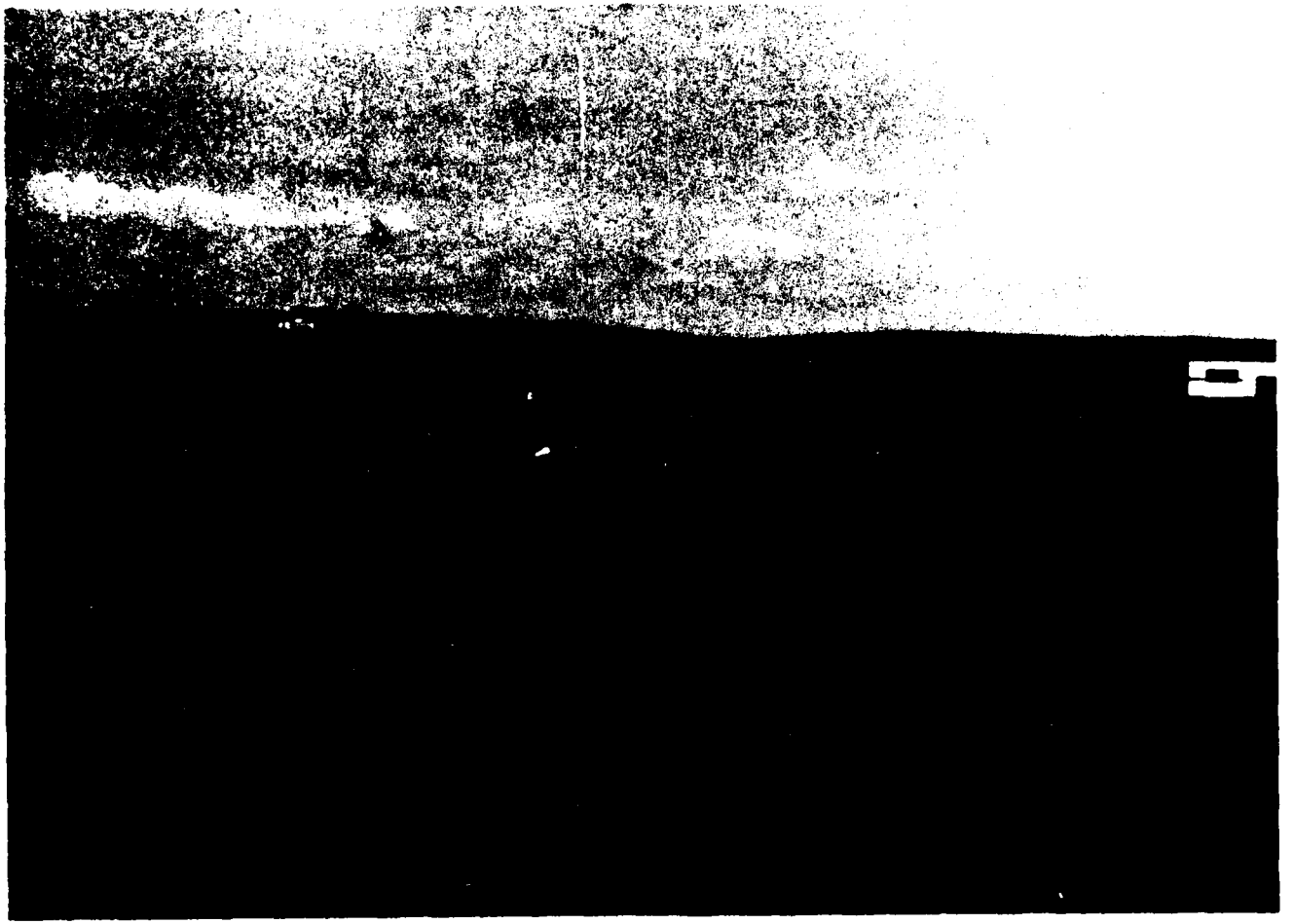


Figure 6.37. Depression at 32S116.

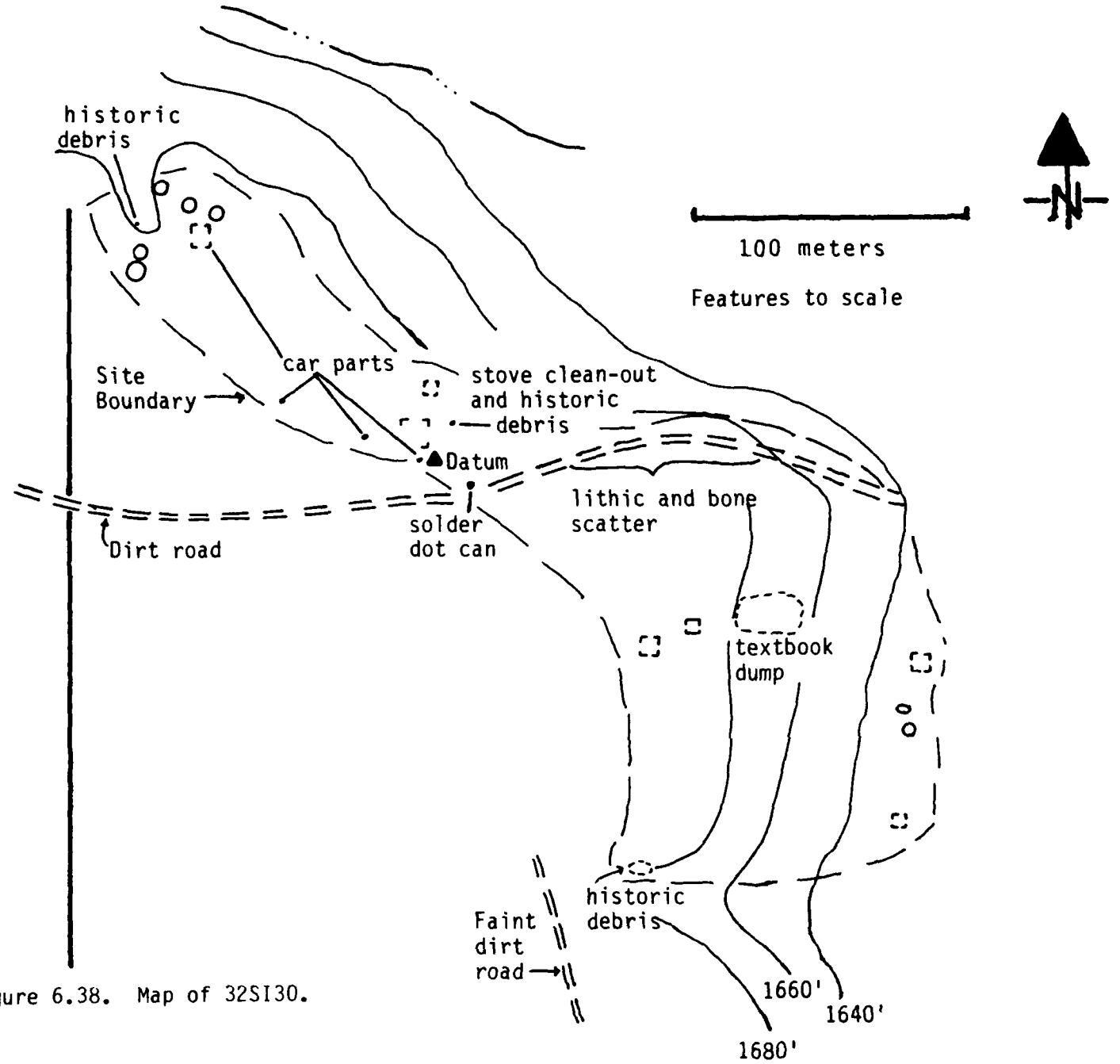


Figure 6.38. Map of 32SI30.

The prehistoric component of this site is in very poor condition. It is not recommended for further work and is probably not eligible for nomination to the National Register of Historic Places.

The historic component of this site is located largely on top of the terrace. It consists of at least fourteen depressions and a large scatter of cultural material. The shape and depth of several of the features indicate they may be disinterred graves, but no records exist to support such an assessment. The area of the historic component of the site is 46,875 square meters.

Historic artifacts indicate a date range of ca. 1860 to 1930. A calico button and a prescription bottle from 32SI30 are illustrated in Figure 6.39. Other artifacts include metal fragments, buckets, bed springs, a bed frame, modern cans, continuous thread bottles, a galvanized wash tub, automobile parts, window glass, ash, burned bone, glass bottles, nails, crockery fragments, solder-dot cans, barbed wire, and bone.

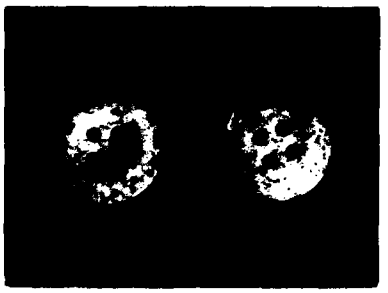
Portions of the site area and the immediate vicinity were allotted to Jesse One Dog by trust patent of January 1, 1910. Subsequent chain of title: Jesse Red Hawk (1921, passed by will); Esther Red Hawk (1923, passed by will); Standing Rock Sioux Tribe (1947, invalid-wrong description); Louis J., Francis, Vivian Joan Yellow (1946, heirs at law); and Standing Rock Sioux Tribe (1948, one-third interest of Louis Yellow conveyed by deed); Vivian J. Yellow (1950, one-third interest heir at law).

A second portion of the site area and the immediate vicinity were allotted to Mark Goodwood by trust patent of December 21, 1908. Subsequent title holders have been: Benedict Goodwood, Mrs. Jerome Cadotte, and Mary McLaughlin (1922, heirs at law); Ellen, Agnes, Beatrice, Grace, Florence, and George Goodwood (1928, heirs at law of Benedict Goodwood); George Goodwood (1942, by will from Agnes Goodwood); and Standing Rock Sioux Tribe (1948). None of these persons appear to have been particularly prominent in local history.

Based on the potential temporal extent of this site and the possibility that portions of the site may represent Native American occupation prior to the establishment of the reservation, further work is recommended. Extensive testing and archival research should be completed at this site to determine its age and function prior to a determination of eligibility to the National Register of Historic Places.

32SI31

The exposure of cultural material at this site is visible along the cut of a road leading to the confluence of an unnamed drainage and the Missouri River (Figure 6.40). It is confined to an area of 75 square meters. The site is on the south slope of a terrace at an elevation of 1640 feet. It is 100 meters north of an intermittent northeasterly flowing drainage at an elevation of 1620 feet. Soil depth is unknown but cultural materials appear to be at a depth of less than 10 centimeters.



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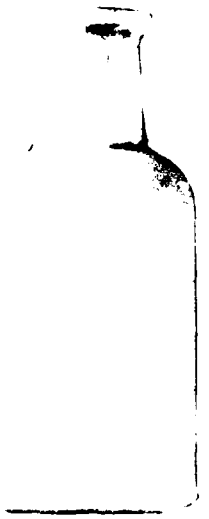

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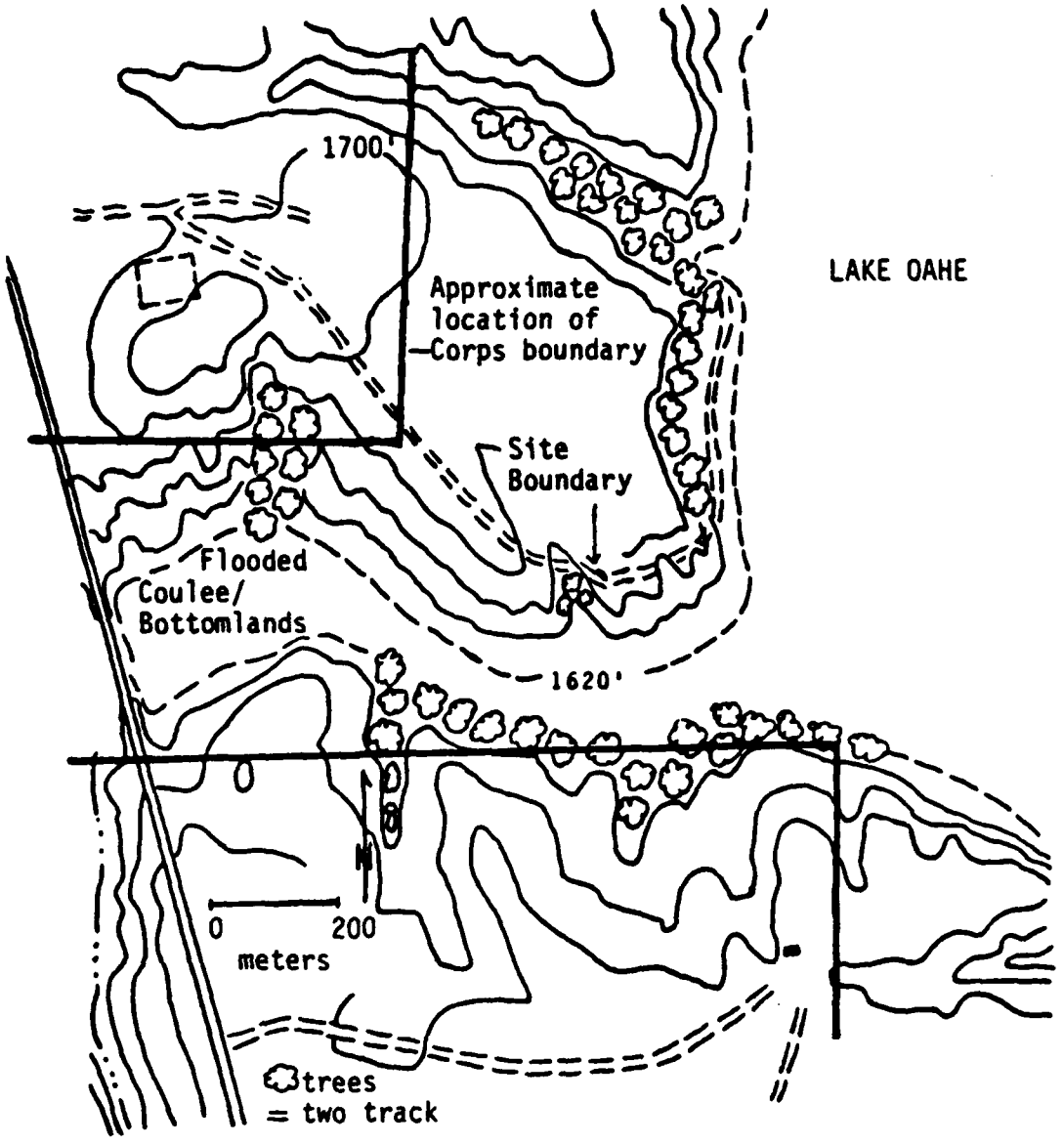
Figure 4. 34. Historic artifacts from 32SI30 (actual size).



32SI31

Figure 6.40. Map of 32SI31.

Cultural material observed at this site includes two Knife River flint flakes and one obsidian flake. A dark stain of unknown origin was also observed in the road cut.

Vegetation is primarily a mixed grass prairie including needle-and-thread, blue gramma and western wheatgrass. In the valley to the north, bur oak, plum, and a grassland of big bluestem and porcupine grass were observed. Visibility ranges from poor to good over various areas of the site.

The integrity of this site may have been affected by slope wash, water level and road cutting. In addition, the paucity of material and lack of depth of deposits indicates that this site is not eligible for nomination to the National Register of Historic Places and no further work is recommended.

32SI32

This site is an abandoned farmstead which consists of a trash deposit, a concrete and stone foundation, and at least one depression (Figure 6.41). Site area is 2200 square meters. All buildings and other structures have been moved but the site does not appear to have been disturbed since it was abandoned. This site appears to be an allotment homestead site, probably post-dating 1920.

Site 32SI32 is located on a terrace above the Missouri River at an elevation of 1640 feet. Vegetation is primarily mixed grasses and brambles. Visibility was fair at the time the site was recorded. An unnamed seasonal drainage is located 40 meters from the site at an elevation of approximately 1630 feet.

The property was allotted to Mark Goodwood by trust patent of December 21, 1908. Subsequent owners have been: Mrs. Paul (Jane) Fast Horse (1922, by restrictive deed); and Samuel Fast Horse (1944, by will of Jane Fast Horse).

The site appears to have low integrity and does not appear likely to yield important cultural information. None of the persons associated with the site appear to have been particularly important in history and archival sources do not indicate other possible significance for the site. This site is probably not eligible for nomination to the National Register of Historic Places.

32SI33

An extensive modern trash scatter in an excavated area and a small depression were recorded at this location (Figure 6.42). The function of the depression is unknown. Site area is 170 square meters.

A General Land Office survey plat of 1893 indicates a habitation to the southwest of this site. The present site area may be related to that occupation. Subsequent maps do not indicate an occupation of the site area

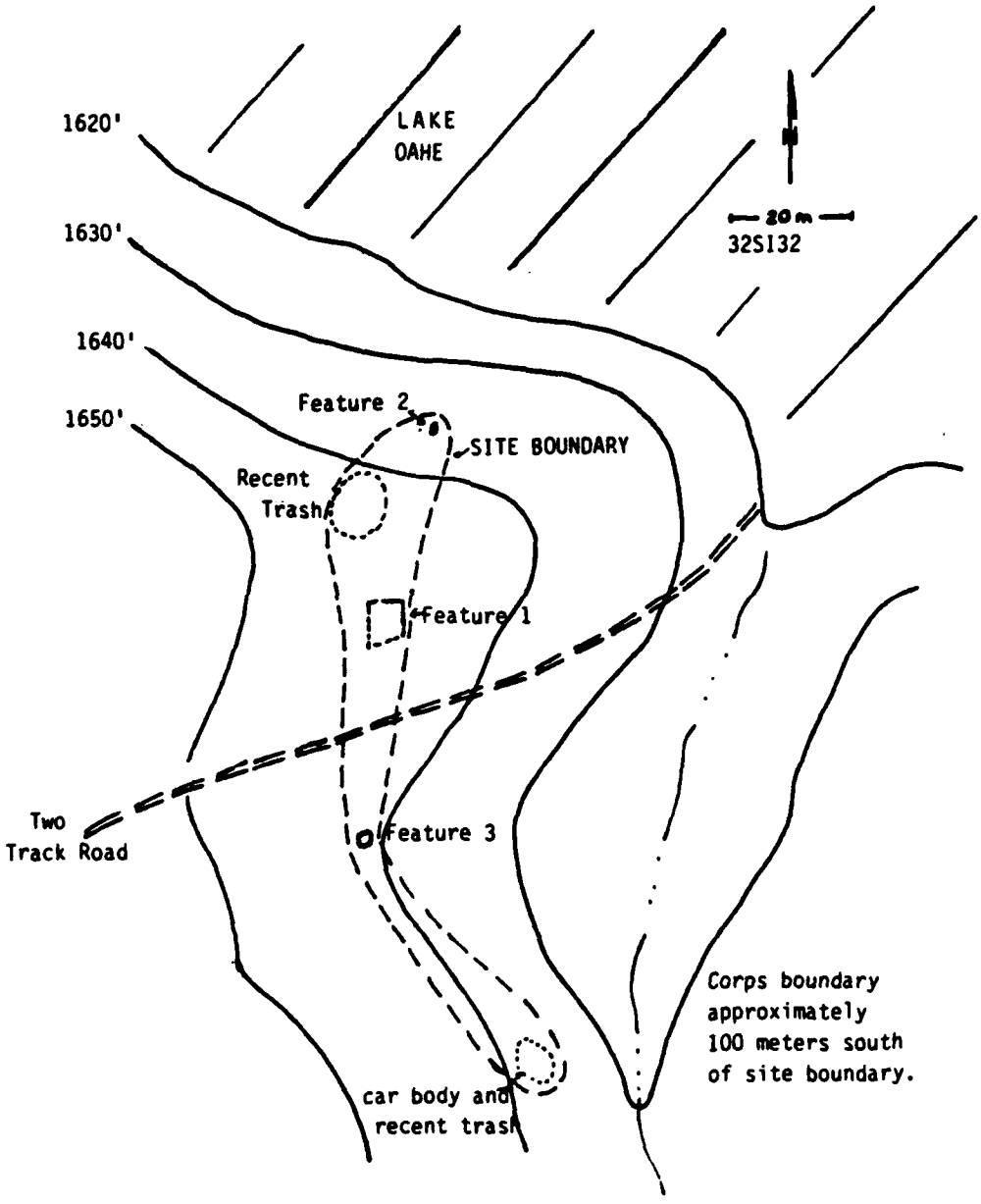


Figure 6.41. Map of 32SI41.

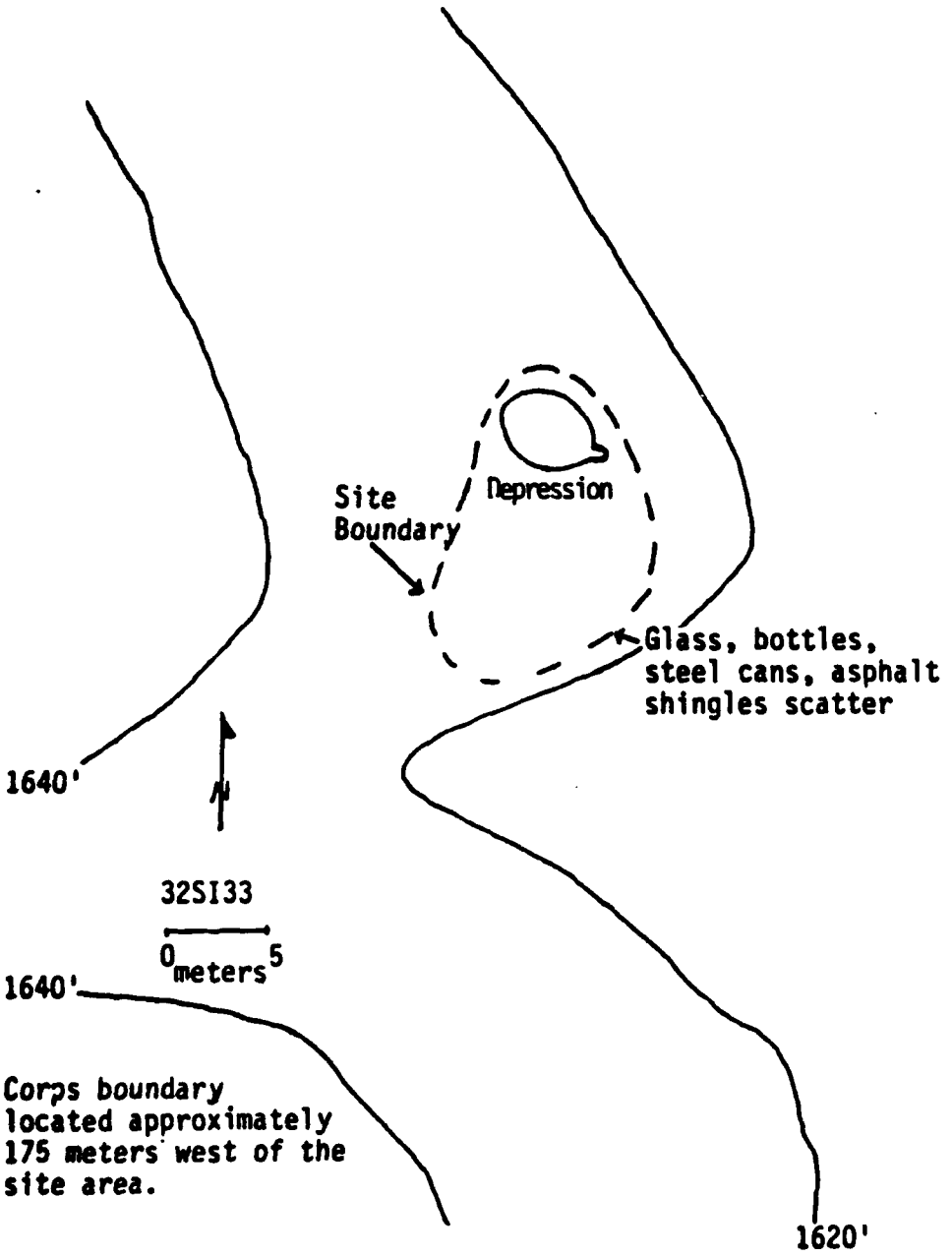


Figure 6.42. Map of 32SI33.

The site is located at an elevation of 1620 feet on a terrace above the Missouri River. An unnamed seasonal drainage is located 800 meters from the site at an elevation of 1620 feet. Vegetation is predominantly mixed grasses and visibility was fair at the time the site was recorded.

The property was allotted to David Redstone by trust patent of January 11, 1910. Subsequent owners have been: Lillian Redstone (1929, by will); Ambrose Eagleboy (1946); and Standing Rock Sioux Tribe (1960, less Oahe).

The site appears to retain good integrity, but is unlikely to yield important cultural information. None of these persons appear to have been outstanding in history and archival sources do not indicate other possible significance for the site. This site therefore does not appear to be eligible for nomination to the National Register of Historic Places, and no further cultural research is recommended.

32SI42

This site consists of an earth-filled dam with a spillway of poured concrete (Figure 6.43). A map of this site is presented as Figure 6.44. Some of the spillway has apparently broken up and been washed into the spillway channel below the dam. The reservoir area is partially silted in but continues to hold water. There are no other cultural materials visible around the structure. According to Mr. Kent Fisher, a rancher located just to the west of the site, the dam was built by the Civilian Conservation Corps, Indian Division (CCC-ID) in the 1930s and has not had repairs since that date. The date of 1936 is incised into one side of the concrete spillway. Site area is 15,000 square meters.

The site is located on Beaver Holes Creek at an elevation of 1641 feet. Vegetation surrounding the dam site is sparse mixed grasses with a few shrubs and trees in the immediate vicinity.

The property was allotted to Chase Bighead by trust patent of June 26, 1908. It then passed to Alice Two Horses (1922). The original allotment subsequently was cancelled and reallotted to Melda Two Horses by trust patent of July 11, 1930. Other owners have been Standing Rock Sioux Tribe (1948, by restrictive deed).

This is a good example of a rather substantial conservation dam built by the CCC during the period 1933 to 1942. Extensive CCC-ID records (see Bromert 1980 for a bibliography) are available and should be utilized to develop a nomination to the National Register of Historic Places for this site.

32SI46

This site is an abandoned farmstead or allotment homestead which includes two depressions and a general dump of relatively recent refuse (Figure 6.45). The site area is 1500 square meters. The portions on the west side of the site have probably been disturbed by gravel mining operations and portions on the east side of the site have eroded into Lake Oahe. This site appears to be a farmstead or domicile site of the post-

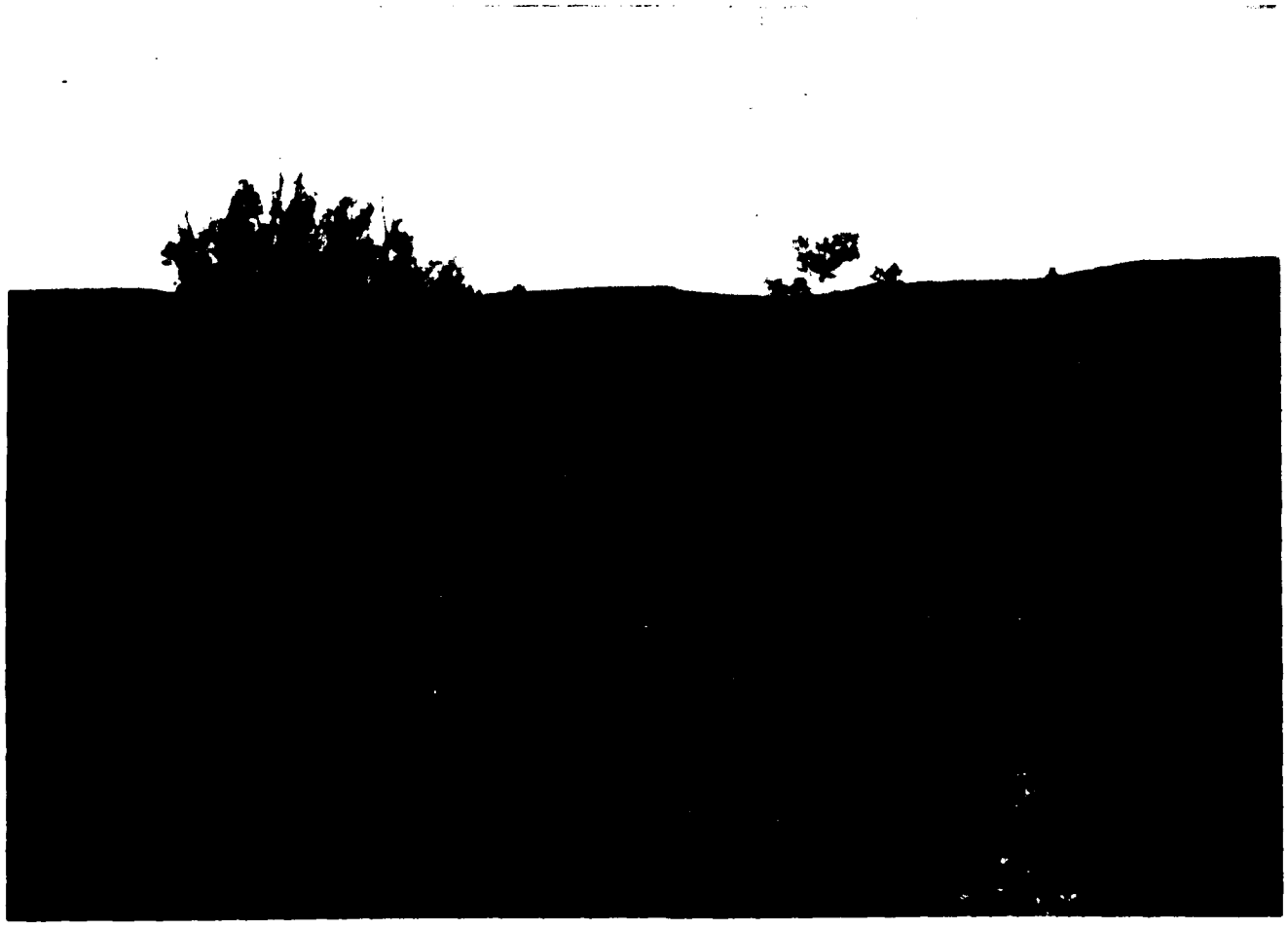


Figure 6.43. Spillway at 22S142.

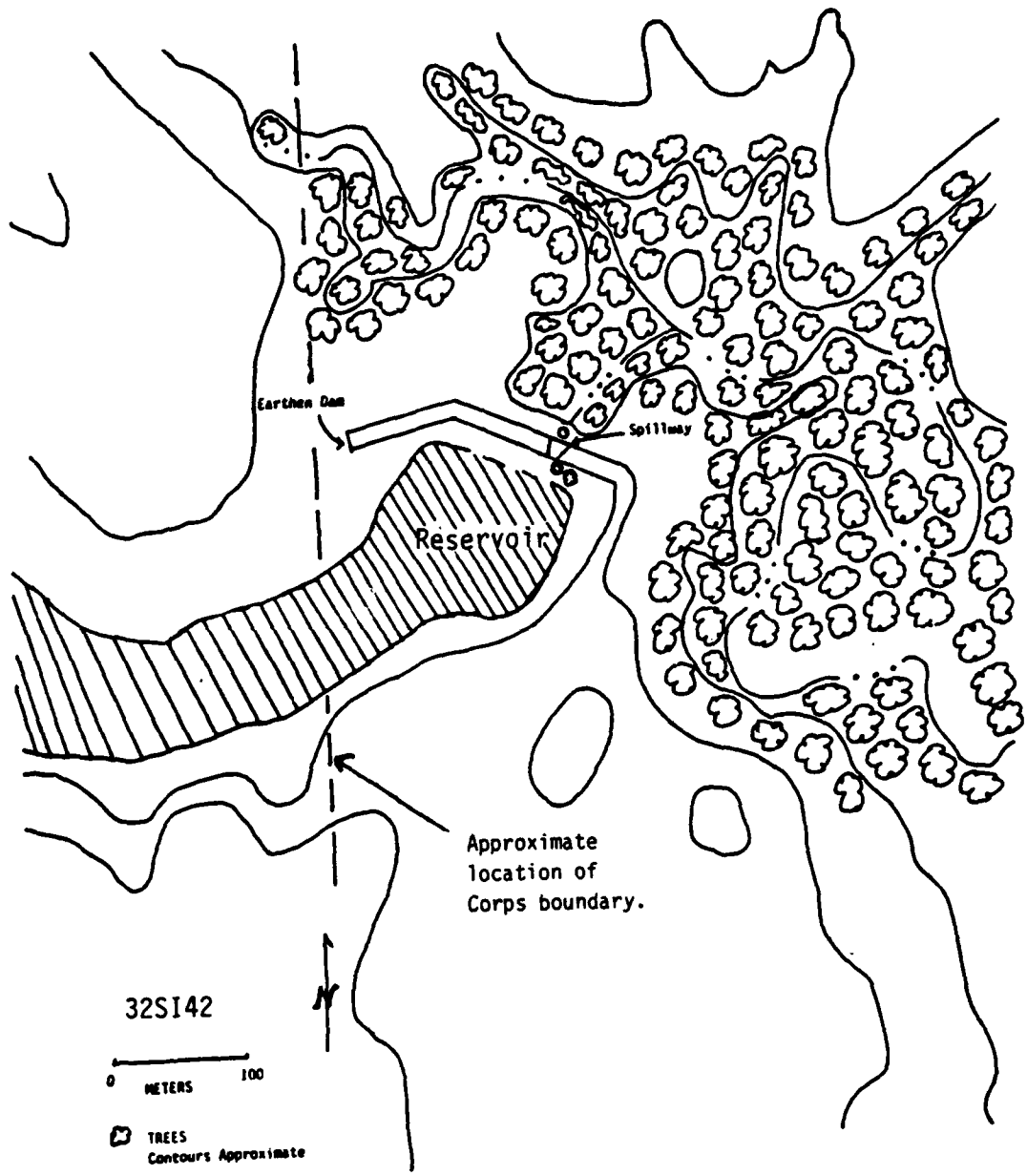
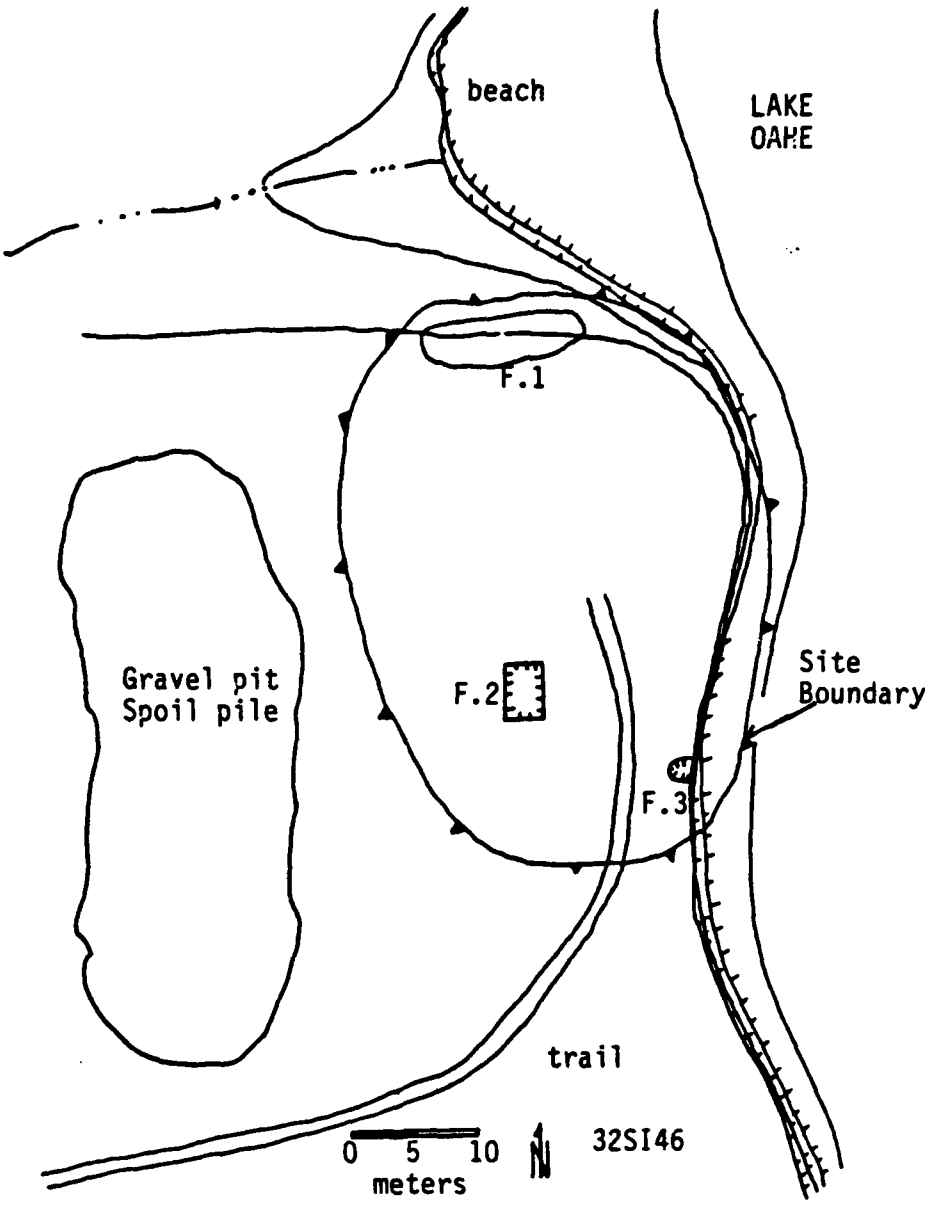


Figure 6.44. Map of 32SI42.



Corps boundary located approximately 375 meters west of the site area.

Figure 6.45. Map of 32SI46.

1930 period. None of the cultural materials on-site appear to pre-date 1950. However, a General Land Office survey plat of 1893 indicates an unidentified building at or near this location.

This site is located on a terrace above the Missouri River. It is immediately adjacent to the cutbank of Lake Oahe. Vegetation is predominantly mixed grasses. Visibility was fair at the time the site was recorded. An unnamed seasonal drainage is located near the northern boundary of the site. Both the site and the drainage are located at an elevation of 1640 feet.

The property was allotted to Claude Kills Spotted by trust patent of January 11, 1910. Subsequent conveyances were to: Julia Ireland Martin (1930, by restrictive deed); Margaret Graystone (1947); and the Standing Rock Sioux Tribe (1950).

The site appears to retain very poor integrity and does not appear likely to yield important cultural information. None of the persons associated with this site appear to have been particularly important in history and archival sources do not indicate other possible historical significance for this site. This site is therefore not believed to be eligible for nomination to the National Register of Historic Places and no further research is recommended.

32SI47

Site 32SI47 is a small exposure of prehistoric materials exposed in a trail, a road cut and the bank of a small intermittent stream (Figure 6.46). A very light scatter of lithics was recorded in a bladed road cut and a small concentration of bison bone was recorded in the creek drainage to the south of the trail (Figure 6.47). Site area is 600 square meters. A Knife River flint biface base, a petrified wood biface fragment, one utilized flake, and one piece of debitage were observed in the road cut. The bison bone exposed in the creek bank consists of a scapula, skull fragment and other small fragments. Some of the rock in the trail may be fire-cracked, but this could not be substantiated.

This site is located at an elevation of approximately 1610 feet on the slope of a terrace above Fool Bear Creek. The elevation of Fool Bear Creek is approximately 1600 feet.

Dense riparian vegetation dominates the site. Visibility was poor with the exception of the road cut and trail. Deposition is unknown, but buried cultural materials may be present.

The integrity of this site is unknown. No intact cultural level was observable either in the creek cutbank or the bladed trail. This site should be tested to determine its integrity, function and eligibility for nomination to the National Register of Historic Places.

Figure [illegible]

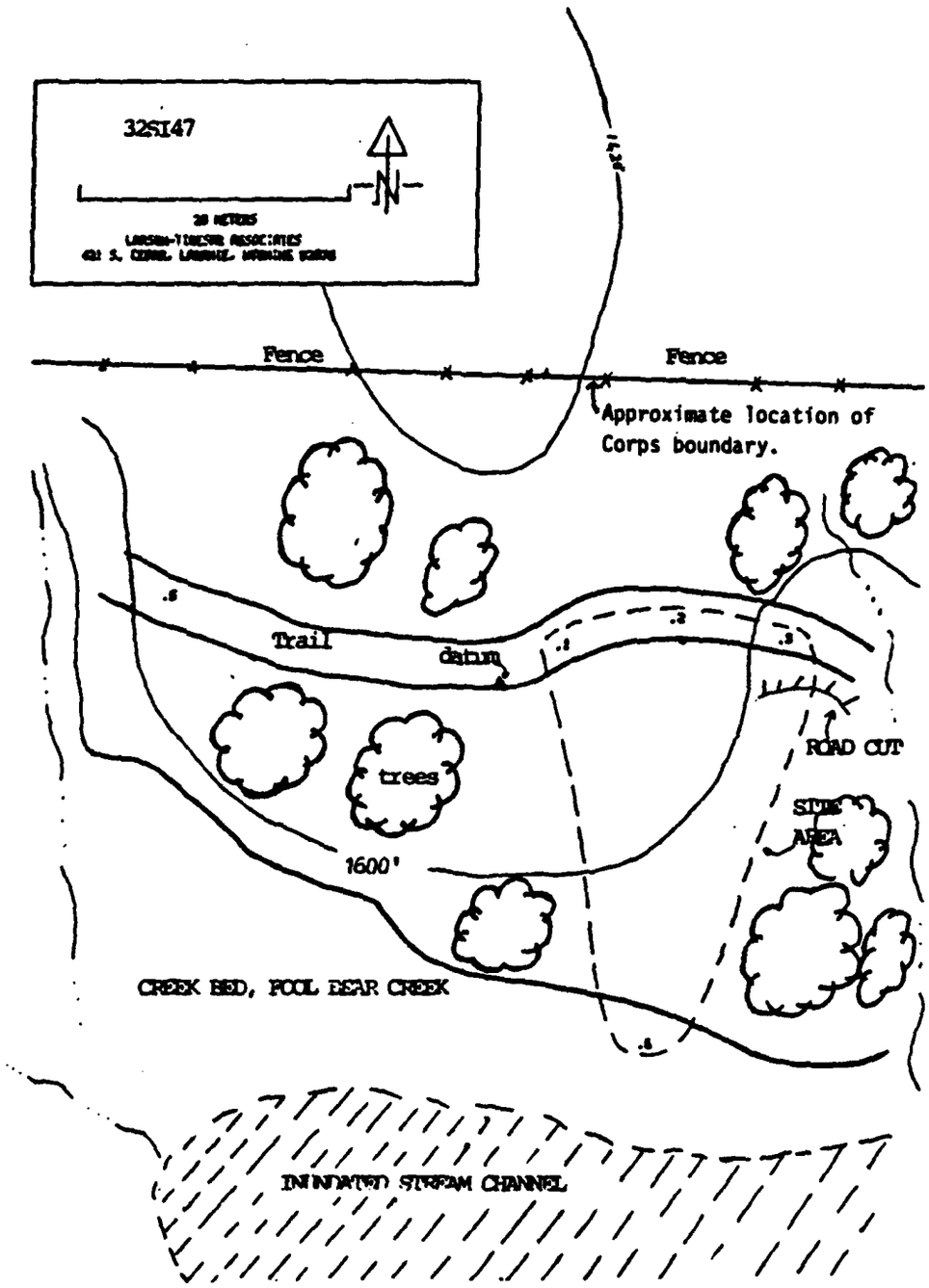


Figure 6.47. Map of 32SI47.

32SI50

This site consists of a low rock cairn of sandstone cobbles on the east side of a small saddle separating two knob-like hill tops (Figure 6.48). A map of this site is presented in Figure 6.49. Elevation is 1720 feet. This ridge of hills forms the divide between the main channel of Fool Bear Creek and its northernmost fork. These drainages are approximately 100 meters from the site. The cairn is approximately 2 meters north-south by 2.5 meters east-west and is approximately .3 meters in height. No other cultural material was observed. Deposition is probably not very deep.

Vegetation on the site is mixed prairie grasses with needle-and-thread dominant. Visibility was good at the time the site was recorded.

The integrity and age of this site is unknown at the present time. The feature does not appear to have been disturbed, but this is difficult to be sure of. This site should be tested to determine its age, function, and eligibility for nomination to the National Register of Historic Places.

TOWNSHIP 134 NORTH, RANGE 79 WEST

32SI49

A very thin scatter of cultural material exposed in a 30 centimeter wide and 30 centimeter deep cow path was observed at this site (Figure 6.50). Site area is 600 square meters. A map of this site is presented as Figure 6.51. The exposed materials consist of the midsection of a projectile point, a flake and a small bone fragment. Based on the local landform, the potential site area could encompass an area approximately 60 meters north-south by 10 meters east-west. Vegetation consists of mixed prairie grasses with needle-and-thread dominant. Visibility was good. Site elevation is 1640 feet. The site is 10 meters west of an unnamed seasonal drainage.

The integrity of this site appears to be poor. The cultural materials may be redeposited from up slope. This site is not believed eligible for nomination to the National Register of Historic Places and no further work is recommended.

32MO1, The North Cannonball Site

The North Cannonball site is a previously recorded site. It consists of a very large and fortified Middle Missouri tradition village. Site area in 1984 was estimated at 75,000 square meters.

Will and Hecker (1944:92) describe the site as follows:

> [The North Cannonball site], located on the north terrace of the Cannonball River, has an area of 10 to 12 acres. It is situated on what might be called a high promontory, formed at the confluence of two streams. The site was fortified by a long,

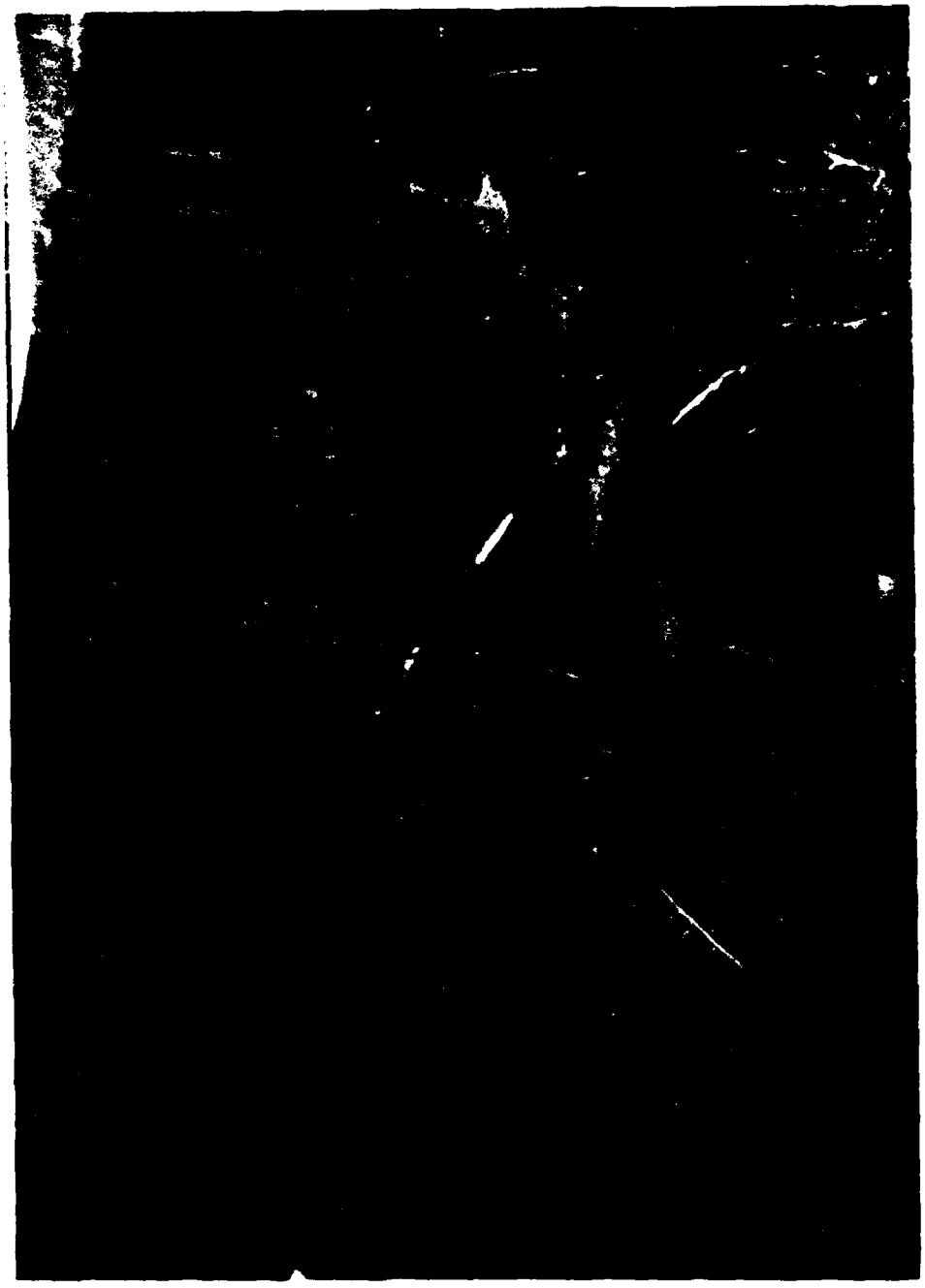


Figure 6.48. Cairn recorded at 32SI50.

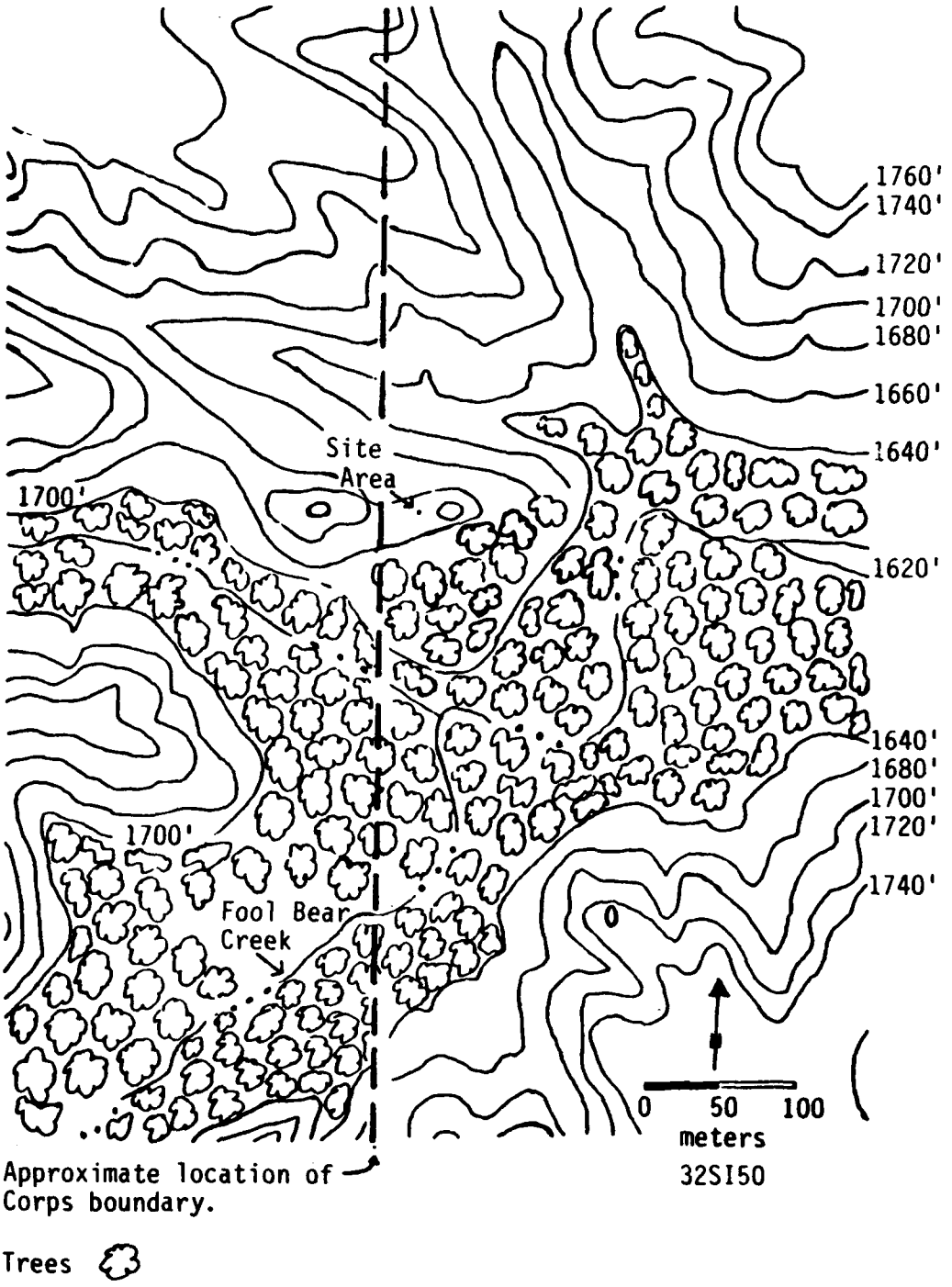


Figure 6.49. Map of 32SI50.

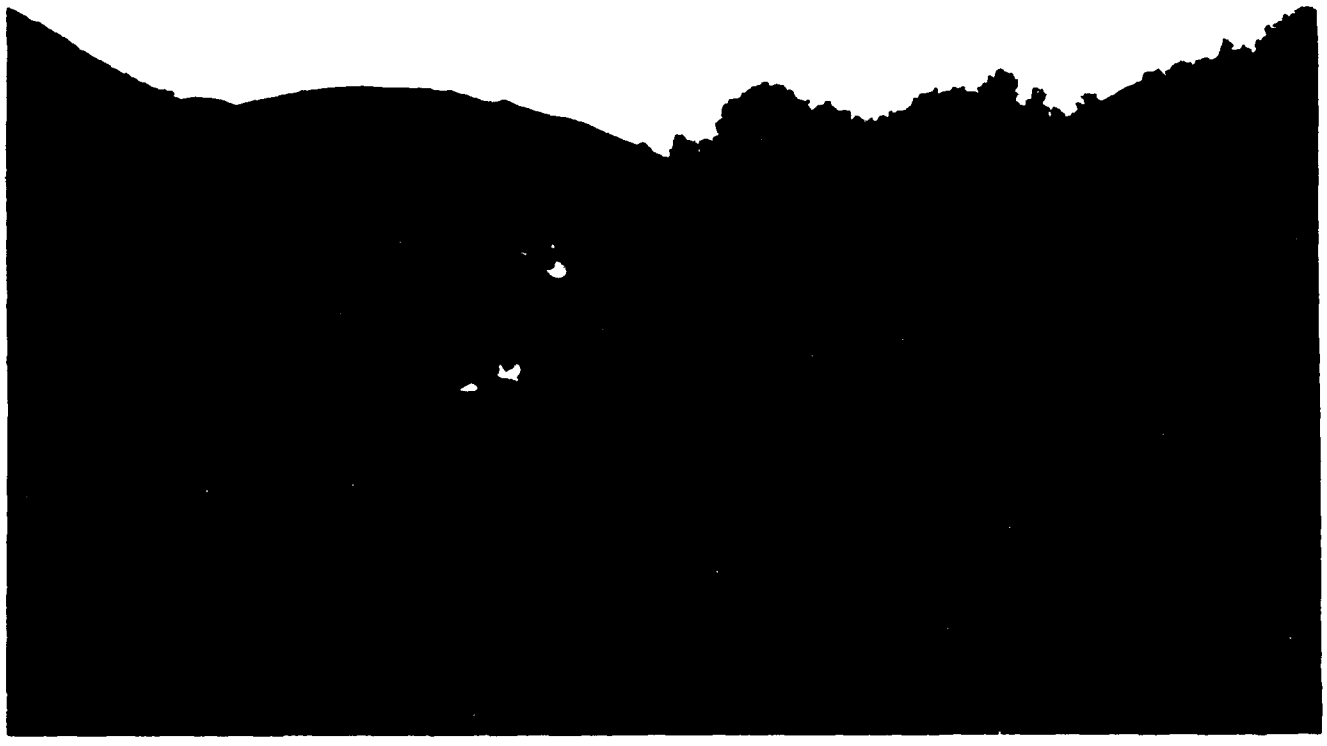


Figure 6.50. Site area of 22S149.

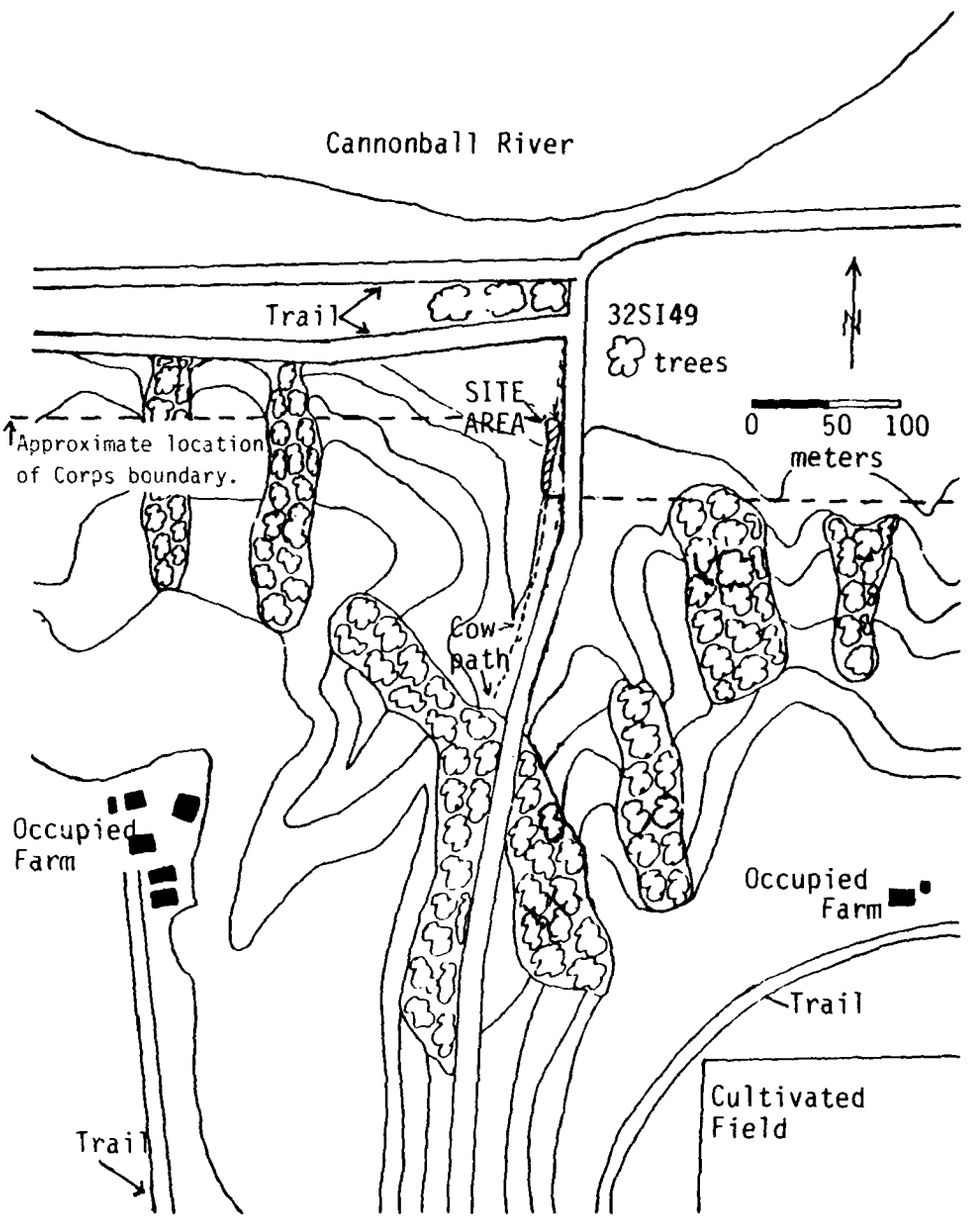


Figure 6.51. Map of 32SI49.

rambling ditch across the base of a triangular shaped area. That the ditch was dug after the site was estimated is obvious, as the ditch winds in and out around house pits and leaves some houses on the outside of the ditch. The greater part of the site has been under cultivation but the ditch can be traced and the majority of the lodge ruins located. The lodge pits still showing on undisturbed ground appear to be ruins of rectangular type houses. The pot sherds are Middle Mandan types.

Although Will and Hecker indicate that some of the lodges are located outside of the fortification ditch, this was not obvious at the time of the 1984 inventory. Aerial photos and ground inspections indicate that the ditch is semi-circular and bastioned (Figure 6.52) very similar in appearance to Lower Fort Rice and Shermer. Based on these fortifications, Lehmer (1971) has assigned the North Cannonball site to the Terminal variant of the Middle Missouri tradition.

At least four lodge depressions and both ends of the fortification ditch are present in the uncultivated portions of the site. These uncultivated areas essentially form the federally owned part of the site.

Very obvious concentrations of cultural material were observed in the field (i.e., the private land portion of the site). These include small, very dense, concentrations of ceramics, bone and fire-cracked rock. Larger, more dispersed, concentrations are probably the locations of lodges and middens. If mapped, these various types of concentrations would probably reveal a great deal about village patterning. This was not attempted during the 1984 inventory because the plowed area is entirely on private land.

Cultural materials include Riggs and Forts Yates ware ceramics, bone and bone tools, lithics of Knife River flint and Tongue River silicified sediment, cache pit and lodge features, and a diverse assemblage of Plains Village artifactual material. Most materials are visible only on private land. Visibility on the uncultivated portions is limited.

Although this site has been under cultivation for years, there still appears to be good spatial integrity within the deposits exposed in the plowed field. The uncultivated areas appear to be well protected from damage and lodge and ditch features are visible within some of these areas. Neither the access road nor bank erosion seem to be presently significantly impacting the site. It is very clear that the private portions of the site have been collected for years.

This site is believed eligible for nomination to the National Register of Historic Places due to its ability to contribute significant information in the study of Middle Missouri prehistory.

32MO124

This site appears to be the remains of a large homestead/farmstead. It contains at least seven well preserved depressions, the possible remains of a well and scattered refuse (Figure 6.53). All structures have been removed, but the site has not been extensively disturbed. Site area is

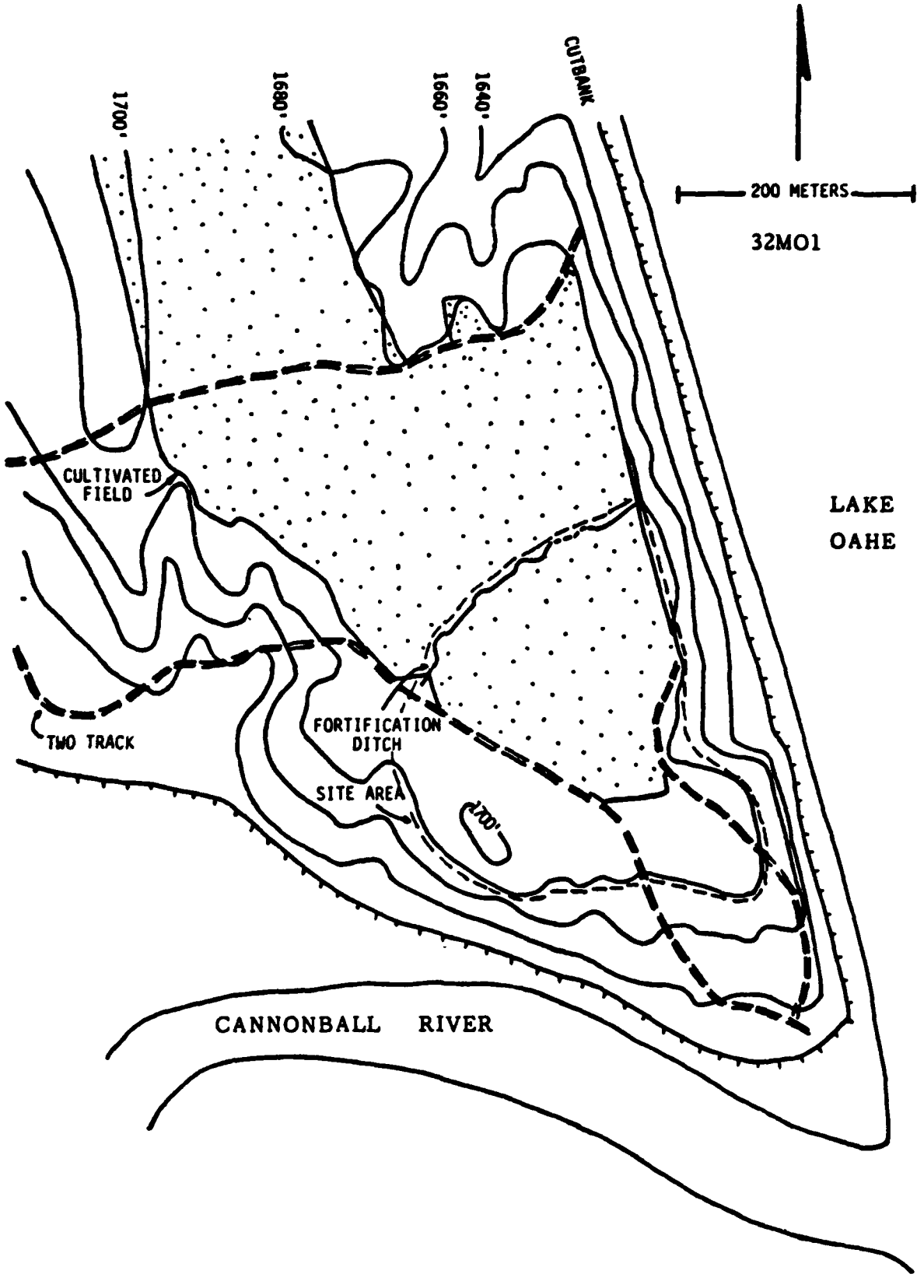


Figure 6.52. Map of 32MO1.

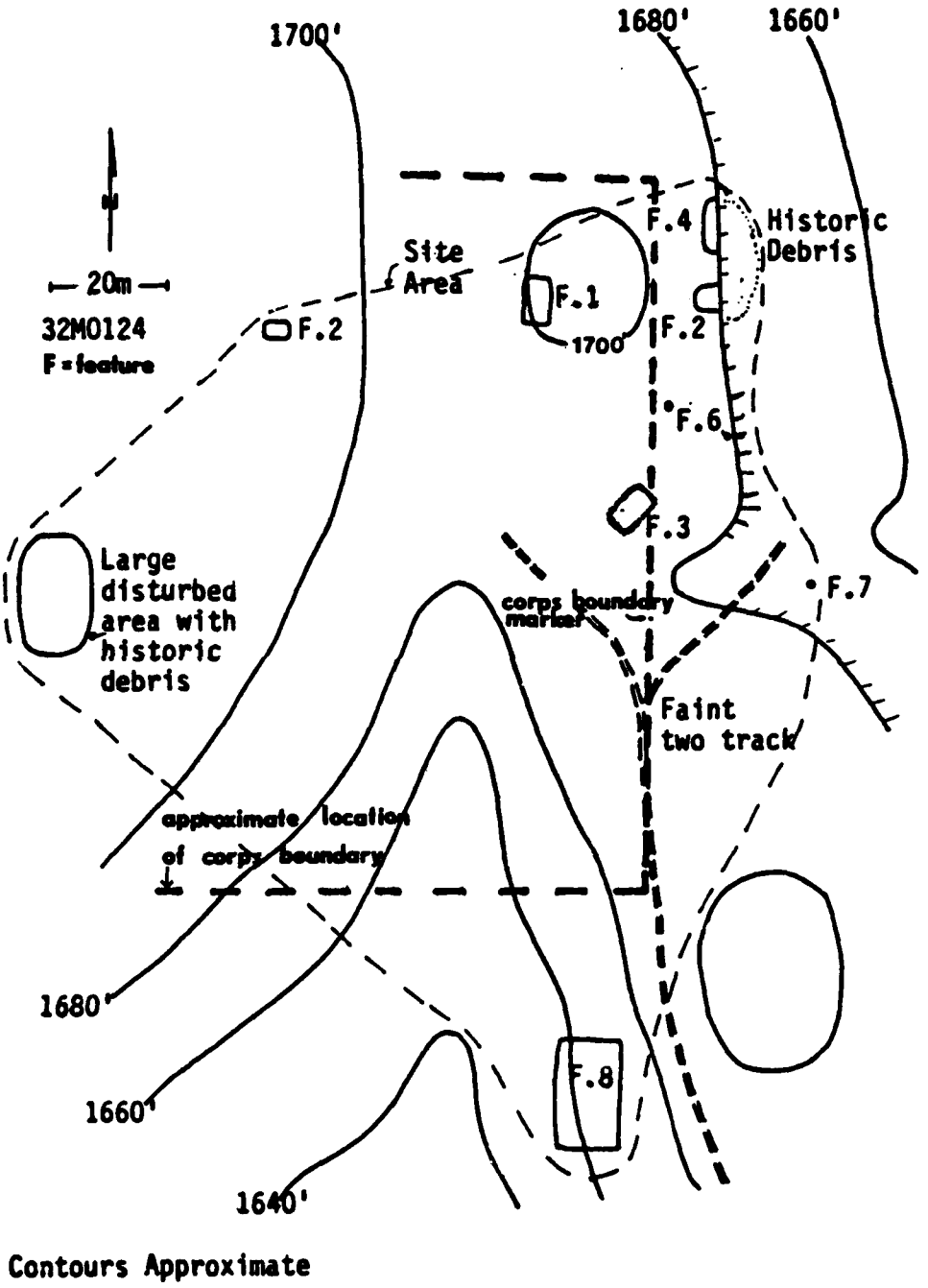


Figure 6.53. Map of 32M0124.

23,000 square meters. Surface visibility was poor at the time of the visit, but the features were clearly defined. This site appears to have been occupied from ca. 1890-1950 era.

The property was patented to James Molash on February 27, 1915. Subsequent owners have been: A. V. & Lily Schallern (1918); First National Bank of Mandan (1927, by sheriff's deed); Erick Erickson (1929); Morton County (1941, tax deed); and John F. Sullivan (1941, county deed).

Arthur V. Schallern came to Dakota in 1883, settling in New Salem where he operated a lumber business and was the first postmaster. In 1894 he was elected county auditor for Morton County, serving a number of terms. Mr. Schallern owned acreage upon which his sheep ranch was located. Besides helping found the first creamery in Morton County, he owned a number of steam threshing outfits and a sawmill.

John F. Sullivan came to Mandan in 1907 and entered into practice with Judge J. M. Hanley. Mr. Sullivan together with Francis Murphy of Fargo were retained by the North Dakota House of Representatives in 1921. Their investigation ~~of the activities~~ of the Non-Partisan League's activities concerning the Bank of North Dakota formed a basis for the recall of Governor Lynn Frazier. Mr. Sullivan owned large acreage in a number of counties, including Morton, where he was the owner of the Cannonball Ranch.

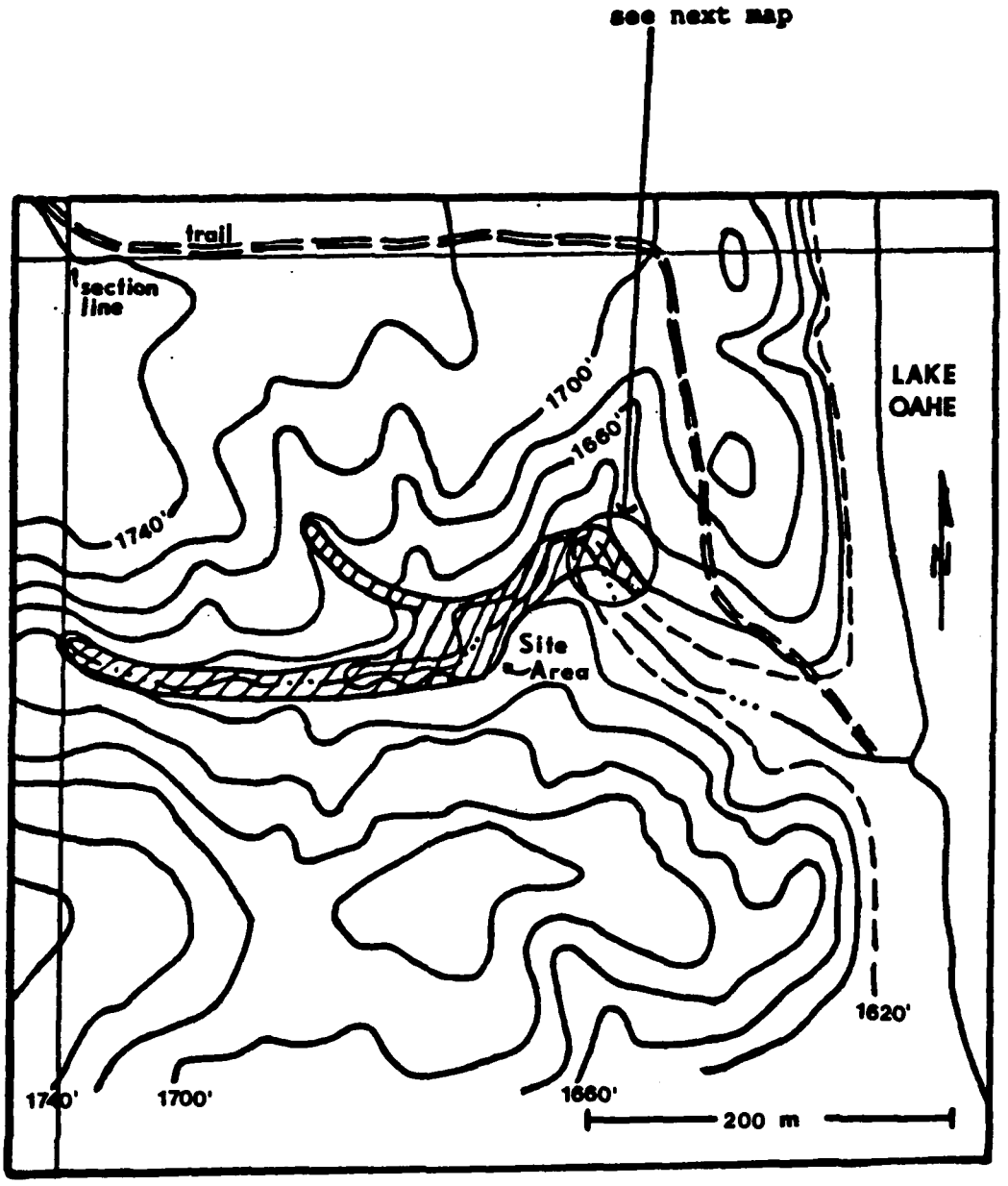
The site appears to have been abandoned prior to the construction of Oahe Dam. The good condition of the features and the potential for buried deposits indicates that this site has the potential to contribute to our understanding of early rural settlement of the area. This site should be tested to determine its age, function and significance.

32MO125

This site consists of an exposure of bison bone in the creek bank approximately one meter below the ground surface. The site extends upstream for approximately 650 meters and also up a tributary draw (Figure 6.54; detail of area illustrated in Figure 6.55). Except for the eastern concentration, much of the site contains only scattered bone.

Materials consist of a moderate quantity of bison bone. One piece of bone was charred. A concentration of elements is exposed in the creek bank on the eastern edge of the site, with a bison skull exposed in a cattle path a few meters to the west of this concentration. The skull (Figure 6.56) appears to have been deliberately modified as part of the butchering process. No other artifactual material was observed.

This site has a good potential to contain intact buried deposits. Its setting also suggests the possibility of a kill site as there are good catchment basins for bison to the north and west of the site area. This site should be tested to substantiate its function and determine its eligibility for nomination to the National Register of Historic Places.



32MO125 Map of site area. Detail map of eastern extent of site and densest concentration of bone presented on next page.

Figure 6.54. Map of 32MO125.

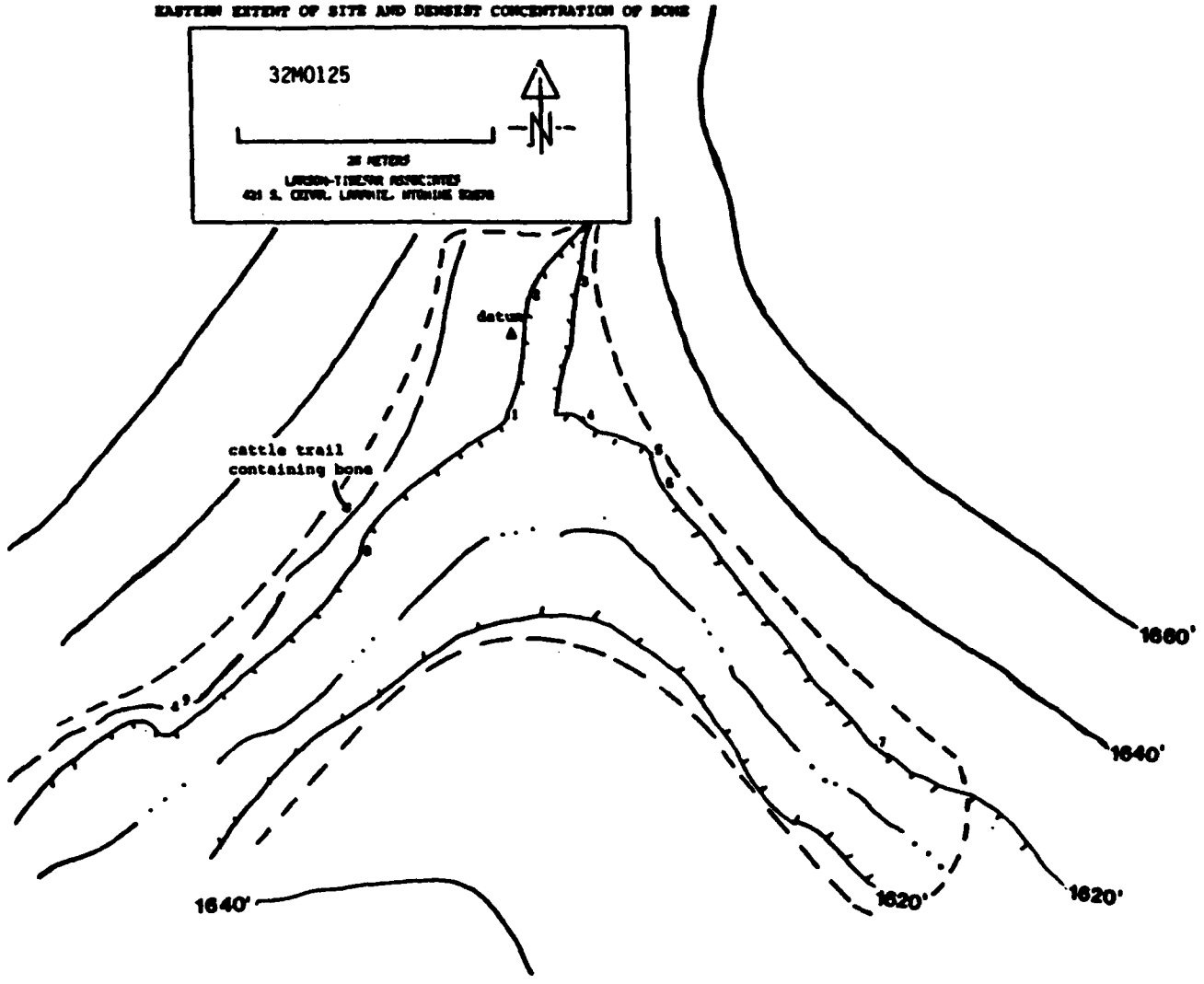


Figure 6.55. Detail of 32MO125. Eastern extent of site and densest concentration of bone.

Figure 6.56. Bison skull exposed at 32MO125.

32M0130

A very small lithic scatter (28 square meters) exposed in the south facing hill slope which forms the north side of a small draw was observed at this location (Figure 6.57). Materials were found eroding out of a small slump area which has exposed the top soil and has very sparse vegetation (Figure 6.58). Cultural materials consist of three flakes of Knife River flint and one flake of grey Tongue River silicified sediment. No cultural level is apparent.

The cultural materials at this site appear to be entirely disturbed. A large portion of the site has probably eroded away completely. Past site function is difficult to determine. This site is not believed eligible for nomination to the National Register of Historic Places due to lack of physical integrity and no further work is recommended.

LT684-11IF

This isolated find is a scatter of bone fragments exposed along a road cut.

LT684-121IF

This isolated find is a Knife River flint tertiary flake, size grade 3 (i.e., greater than or equal to one-half inch but less than one inch in size).

LT684-123IF

This isolated find is a gray Tongue River silicified sediment tertiary flake, size grade 4 (i.e., greater than or equal to one inch but less than two inches in size).

LT684-126IF

This isolated find is a Tongue River silicified sediment biface.

TOWNSHIP 134 NORTH, RANGE 80 WEST

32M0128

Site 32M0128 is a small and very dispersed scatter of lithics occurring in shallow blowouts in the first terrace above an intermittent creek (Figure 6.59). A map of this site is presented as Figure 6.60. Site area is 3800 square meters. It is located at an elevation of 1640 feet. Observed cultural materials consist of one utilized flake of Knife River flint, debitage of Knife River flint and gray Tongue River silicified sediment, a very large core of basalt and one possible rock-filled fire

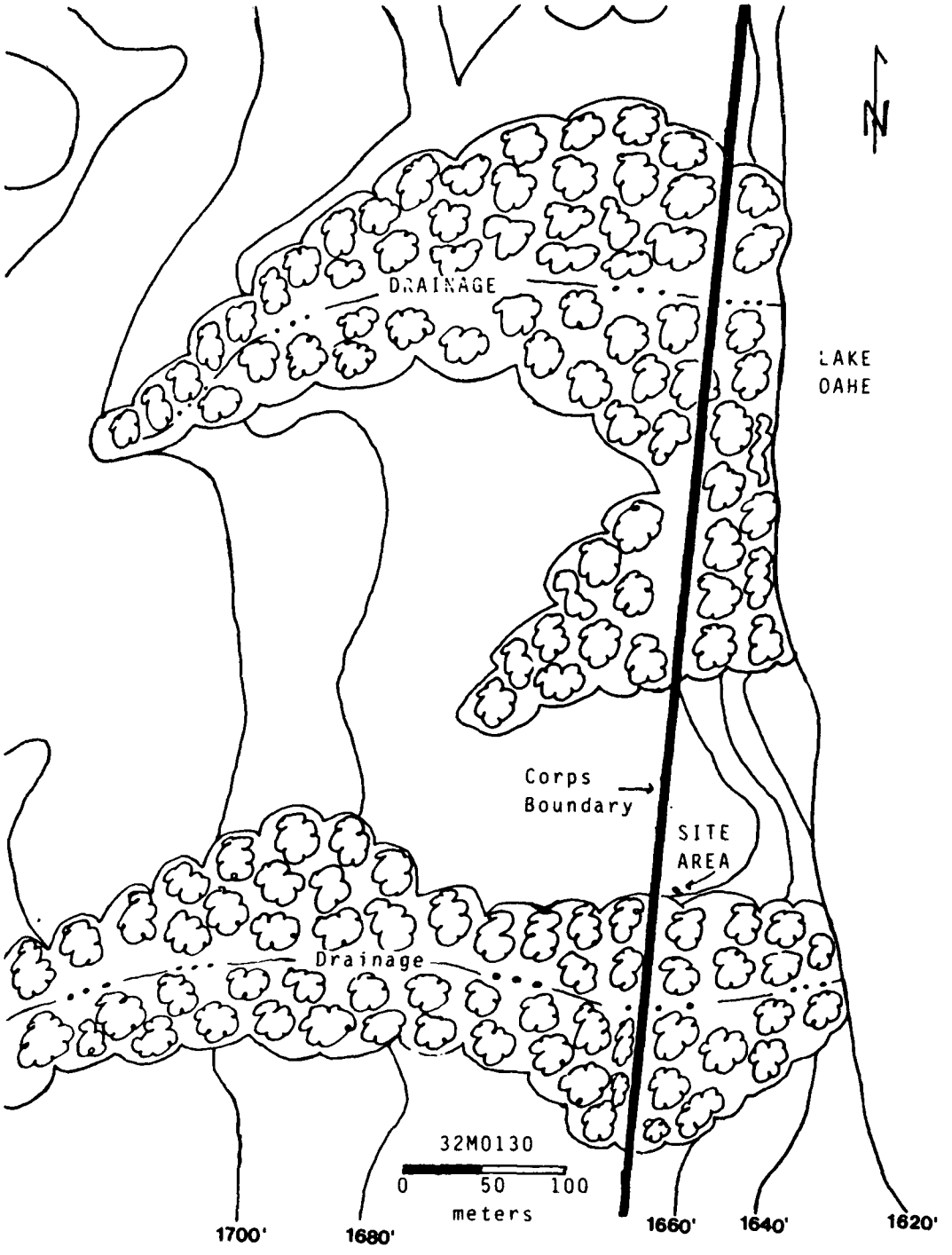


Figure 6.57. Map of 32M0130.

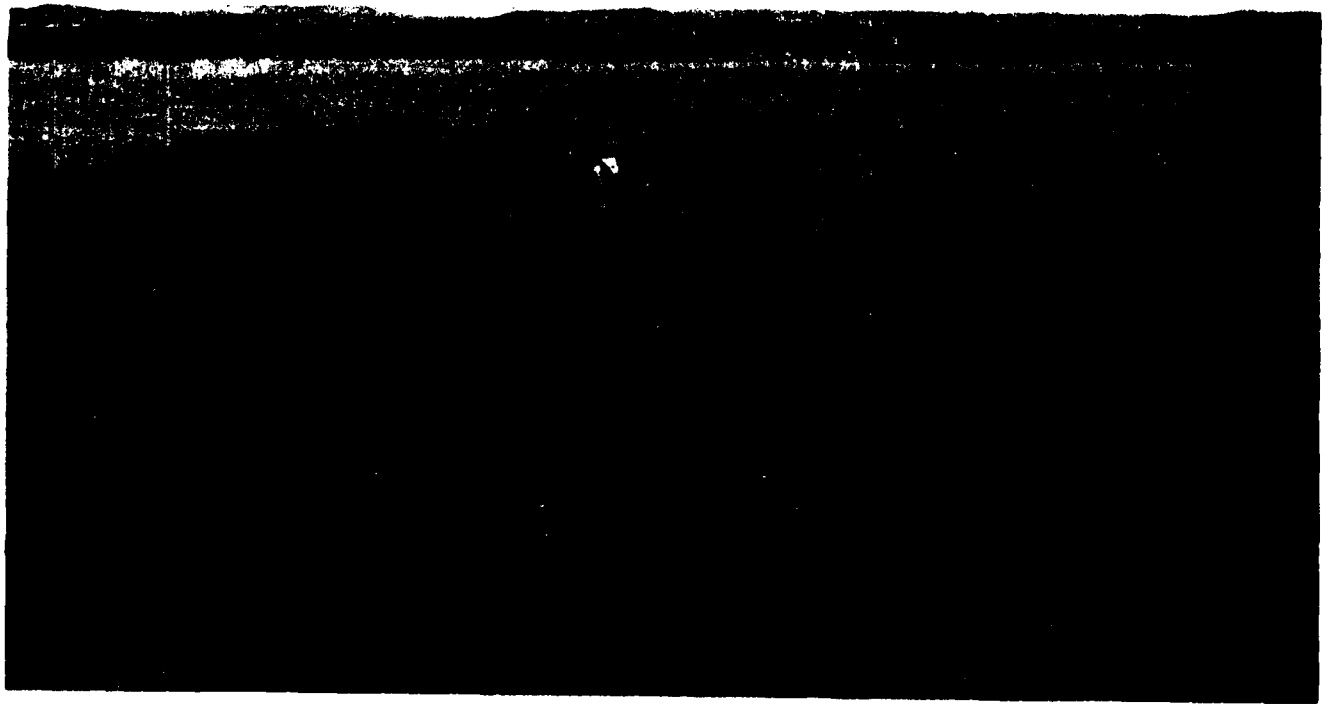


Figure 6.58. Site area of 32M0130.

Figure [illegible]

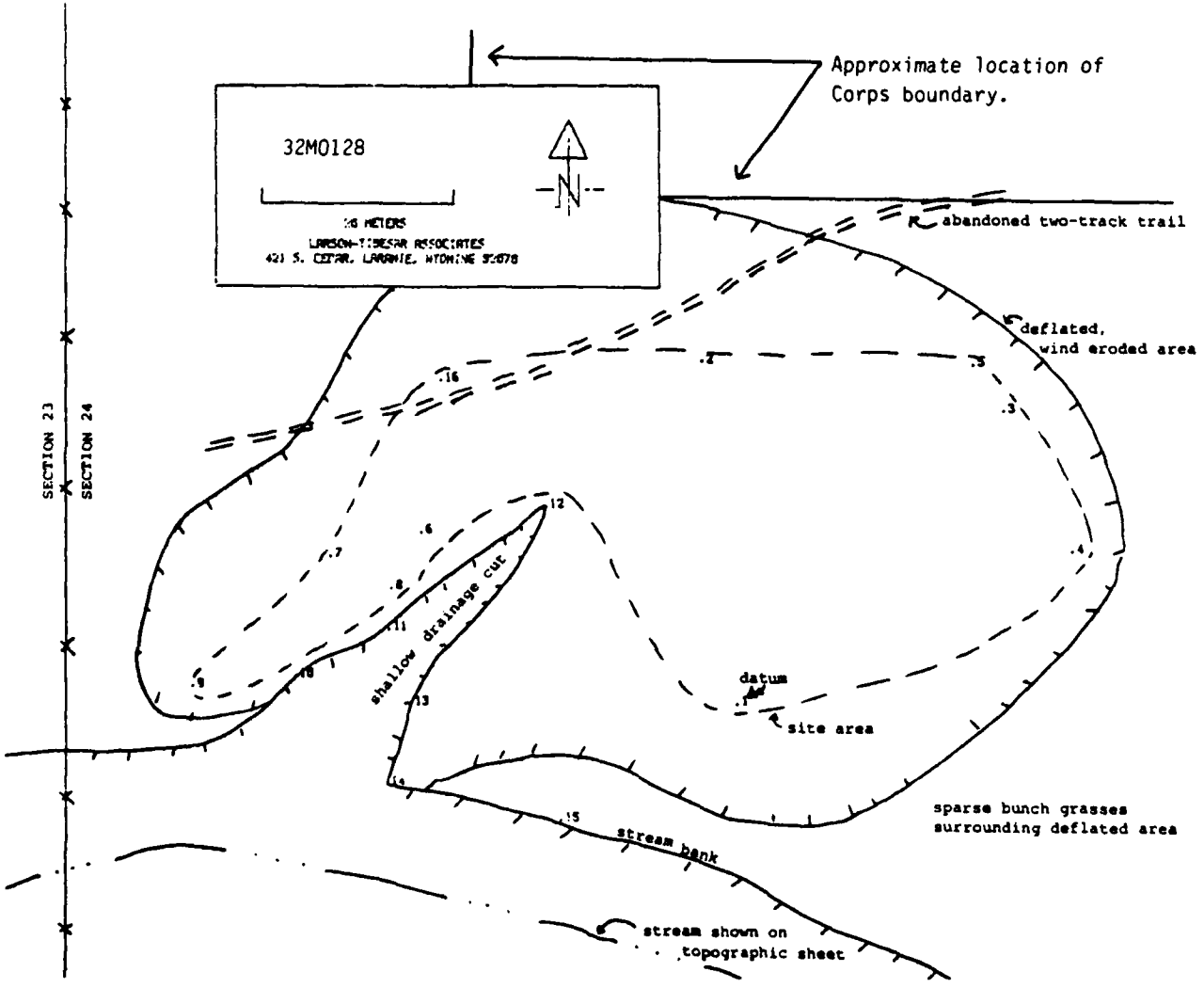


Figure 6.60. Map of 32MO128.

hearth. Although much of the site is in erosional areas, the hearth has been exposed only on one side and seems to indicate that at least some portions of the site may be intact. Erosional exposures indicate that cultural materials are probably no deeper than 30 centimeters.

Vegetation at this site consists of a mixed prairie grasslands with blue gramma and western wheat grass dominant. Silver sage, pepperweed and prairie cone flower were also observed. Visibility was fair. An unnamed seasonal drainage is located 25 meters from the site at an elevation of 1620 feet.

This site should be tested in order to determine its age, function, integrity and eligibility for nomination to the National Register of Historic Places. Intact buried deposits seem most likely in the region of the site near the hearth.

32MO133

The site consists of a very sparse scatter of cultural material on the south side of a small knoll (Figure 6.61). Site area is 100 square meters. Elevation of the site is approximately 1670 feet. Vegetation consists of mixed prairie grasses with needle-and-thread grass and silver sage dominant. Visibility was fair at the time the site was recorded. The site is located 100 meters from the Cannonball River. The river is at an approximate elevation of 1620 feet.

The cultural material from this site consists of a biface tip of Knife River flint, two flakes of Knife River flint and two flakes of Tongue River silicified sediment. All materials are in a ten by ten meter area.

This site appears to have poor physical integrity. All cultural materials occur on the slope of the hill and have probably been displaced from their original positions. This site is not considered eligible for nomination to the National Register of Historic Places and no further work is recommended.

TOWNSHIP 135 NORTH, RANGE 79 WEST

32MO117

A mound and a buried cultural level were observed at this site (Figure 6.62). The mound (Figure 6.63) is approximately 17 meters east-west by 10 meters north-south and is 75 centimeters in height. The buried cultural level, consisting of large mammal (probably bison) rib and vertebra fragments and flecks of charcoal, is exposed 60 centimeters below the ground surface in the eroded edge of the terrace along the eastern edge of the site. Site area is 2000 square meters. Visibility varied from good to fair.

This site should be tested to determine the exact nature of the mound feature and to evaluate the age, extent, and function of the buried

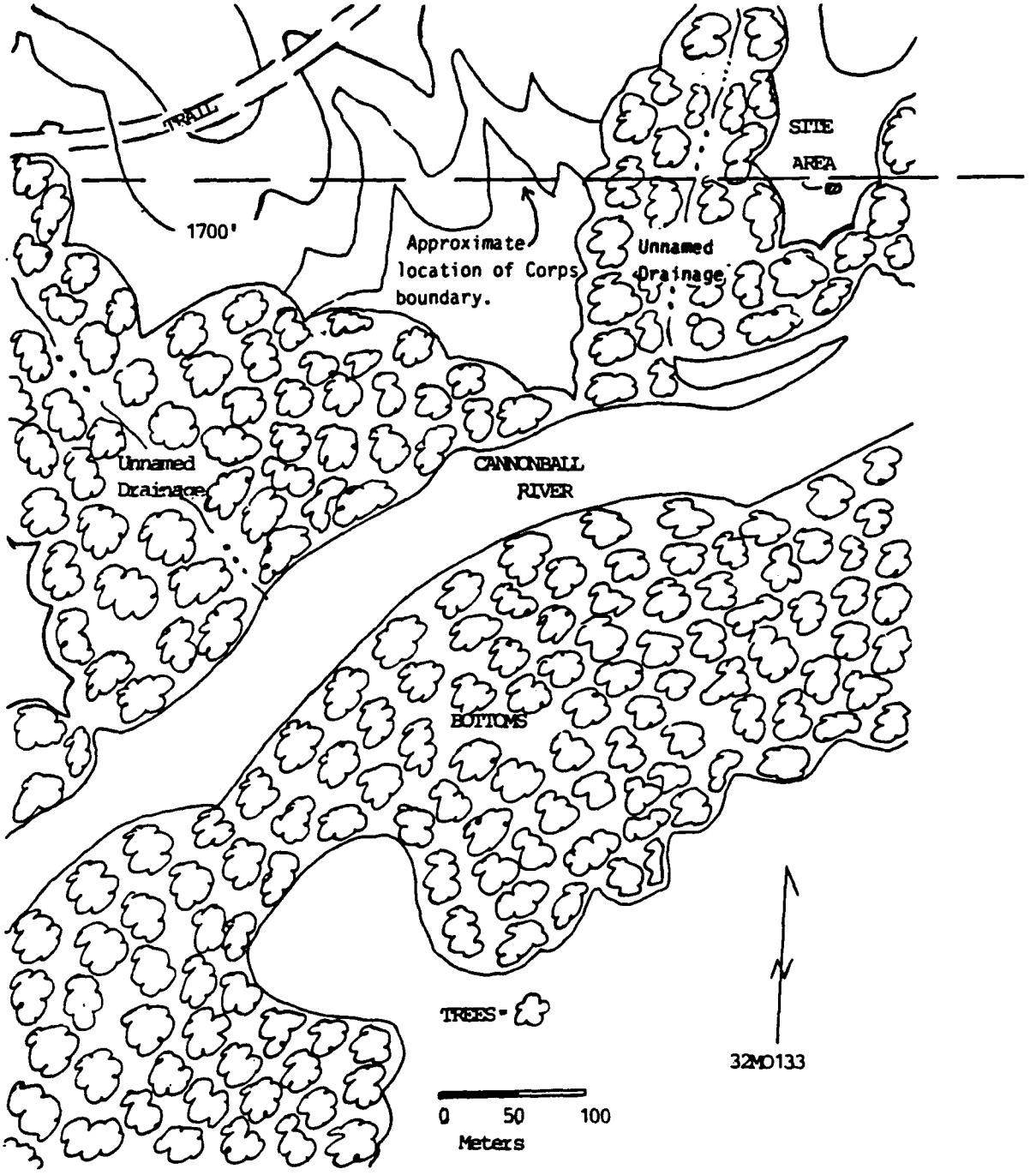


Figure 6.61. Map of 32MO133.

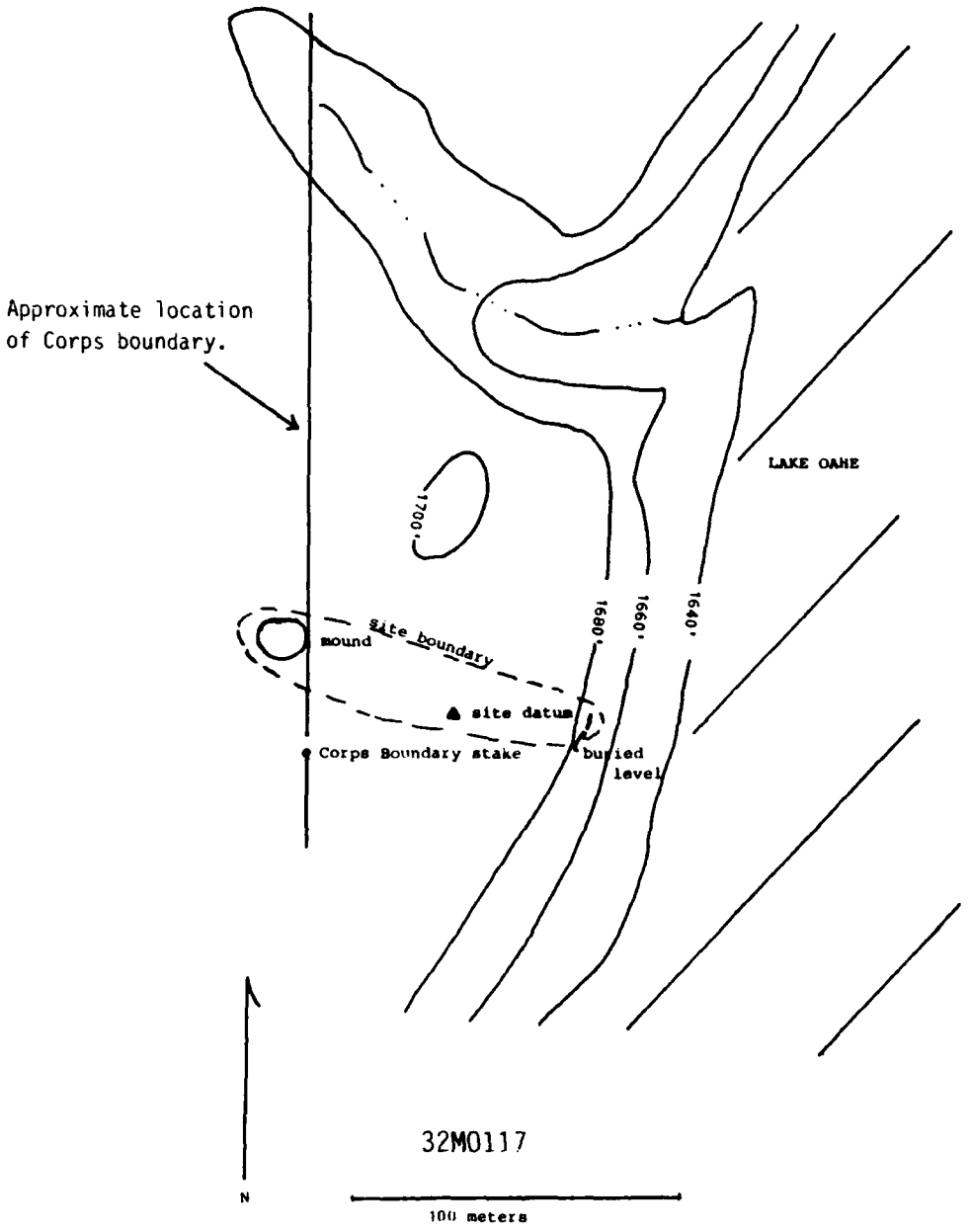


Figure 6.62. Map of 32MO117.

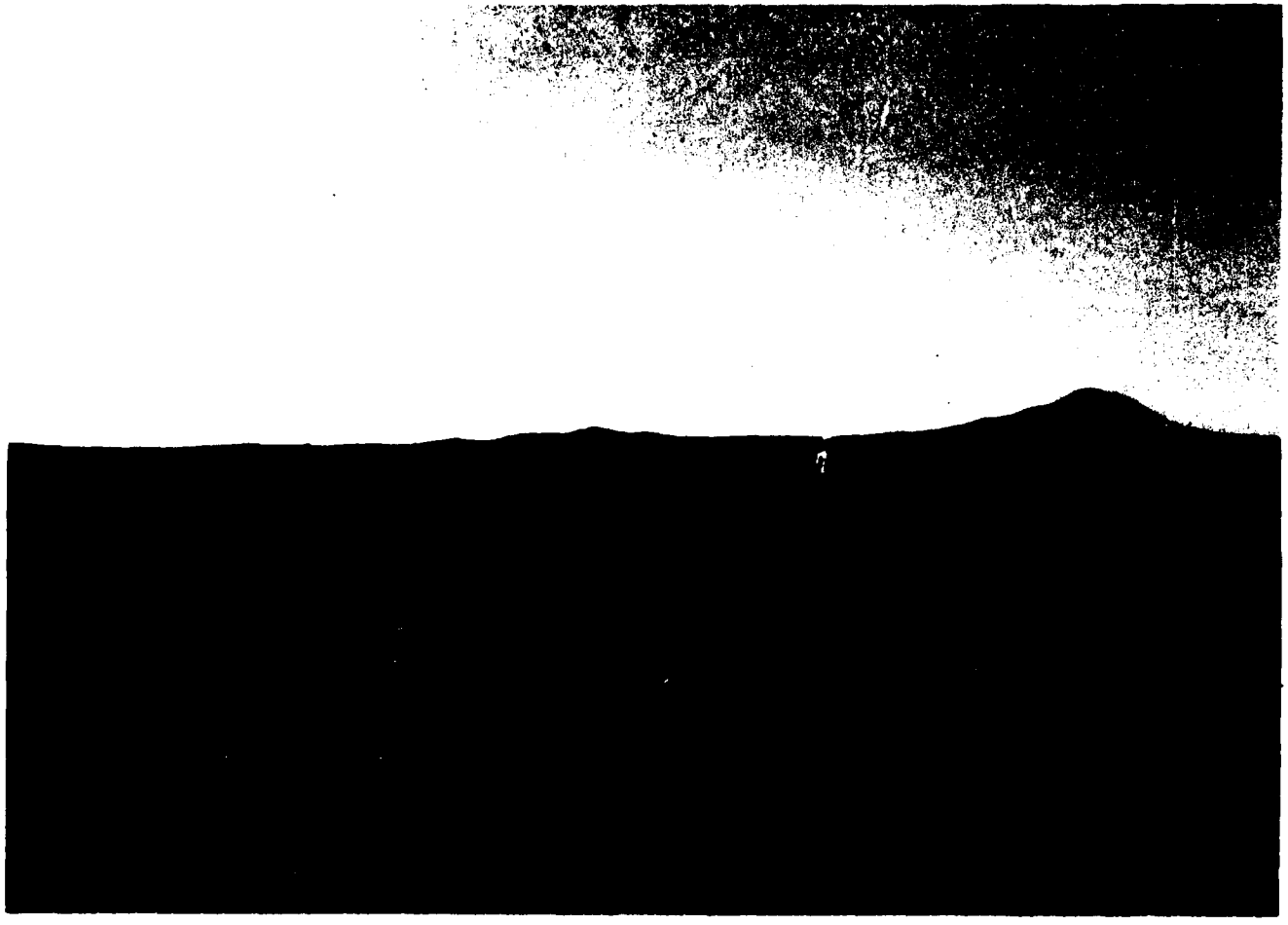


Figure 6.63. Mound at 32MO117.

cultural level. Eligibility for nomination to the National Register of Historic Places cannot be determined until the testing has been completed.

32MO121

A single rectangular depression and the remains of a structure which was banked into the side of a hill were observed at this site (Figure 6.64). Earth is mounded on all sides of the depression. The depression is approximately six meters east-west and five meters north-south. Within the depression are the remains of the log sills or log walls which have been sawn roughly flat. There are also two upright log piers which have round wire nails in them. No other artifacts were observed in or around this feature. In the low area to the east and northeast of the site are occasional pieces of barbed wire and modern crimped cans. Site area is 400 square meters. Surface visibility was poor at the time the site was recorded.

The property was patented to James Molash on February 27, 1915. Subsequent owners have been: A. V. and Lily Schallern (1918); the First National Bank of Mandan (1927, by sheriff's deed); Erick Erickson (1929); Morton County (1941, by tax deed); and John F. Sullivan (1941, county deed).

A.V. Schallern and the Sullivan family were prominent ranchers and professional people in Morton County but their association with the present site was small at most. None of the these persons is likely to have lived at the site or taken a direct part in activities on the site. None of the other persons associated with the site appear to have been particularly prominent in history and archival sources do not indicate other possible historical significance for the site.

The remaining structure appears to have fair integrity. It is believed that most other artifactual material may have been destroyed by inundation by Lake Oahe. This site does not appear likely to yield important cultural information and is not believed to be eligible for nomination to the National Register of Historic Places.

32MO126

A single historic dugout and a scatter of artifactual material were observed at this site (Figure 6.65). Artifactual material includes two sandstone fragments, a kick-up base wine bottle within the feature and two small sheet metal fragments. Site area is 225 square meters.

The site is located near the base of a side-slope overlooking what was once the Missouri River bottoms. The site is at an elevation of 1620 feet. The last recorded channel of the Missouri River is located 180 meters from the site. Vegetation at the site includes oak, green ash and chokecherry. Vegetation was dense and visibility was poor. Significant amounts of deposition appear to be present. There is good potential for the presence of intact subsurface deposits.

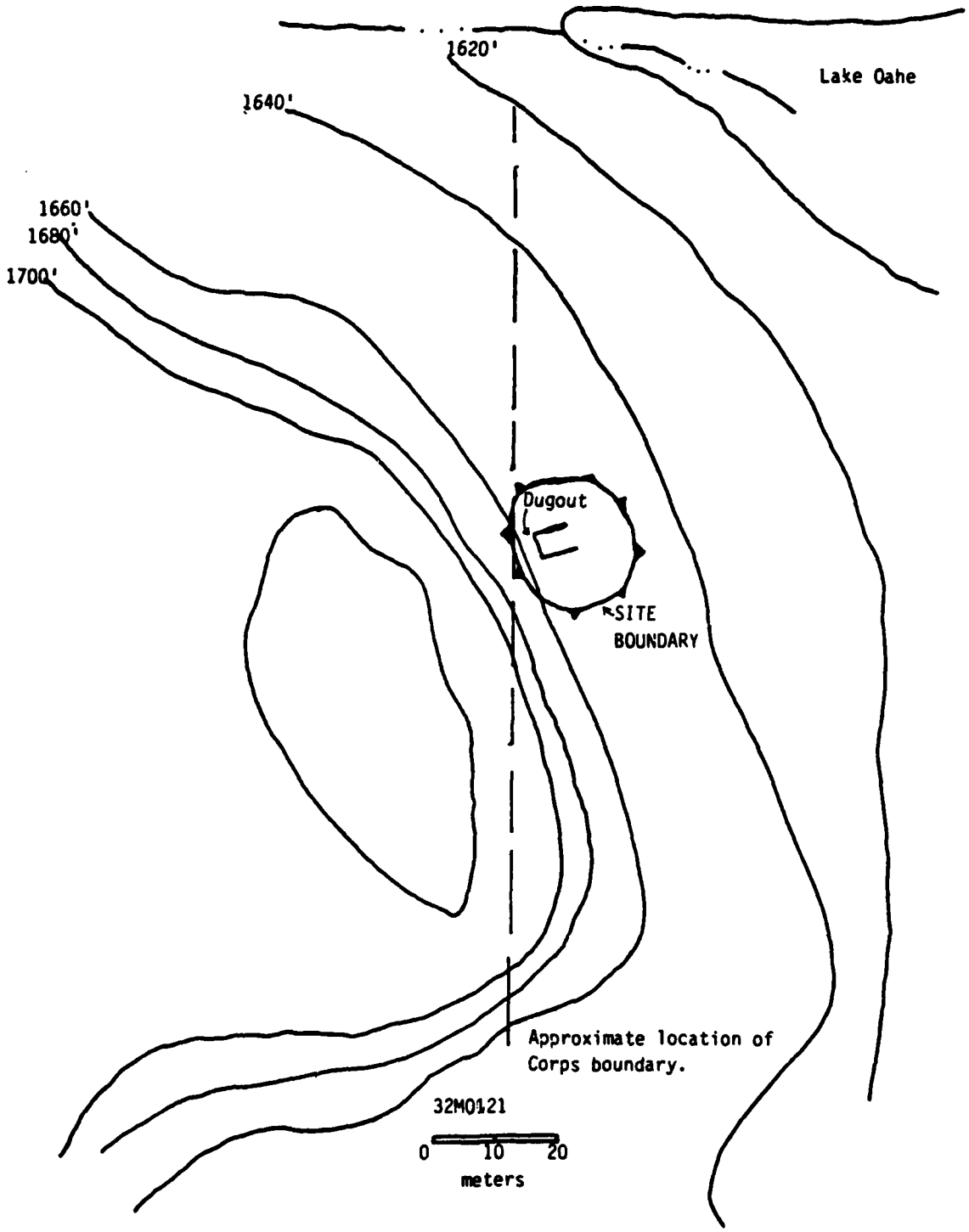


Figure 6.64. Map of 32MO121.

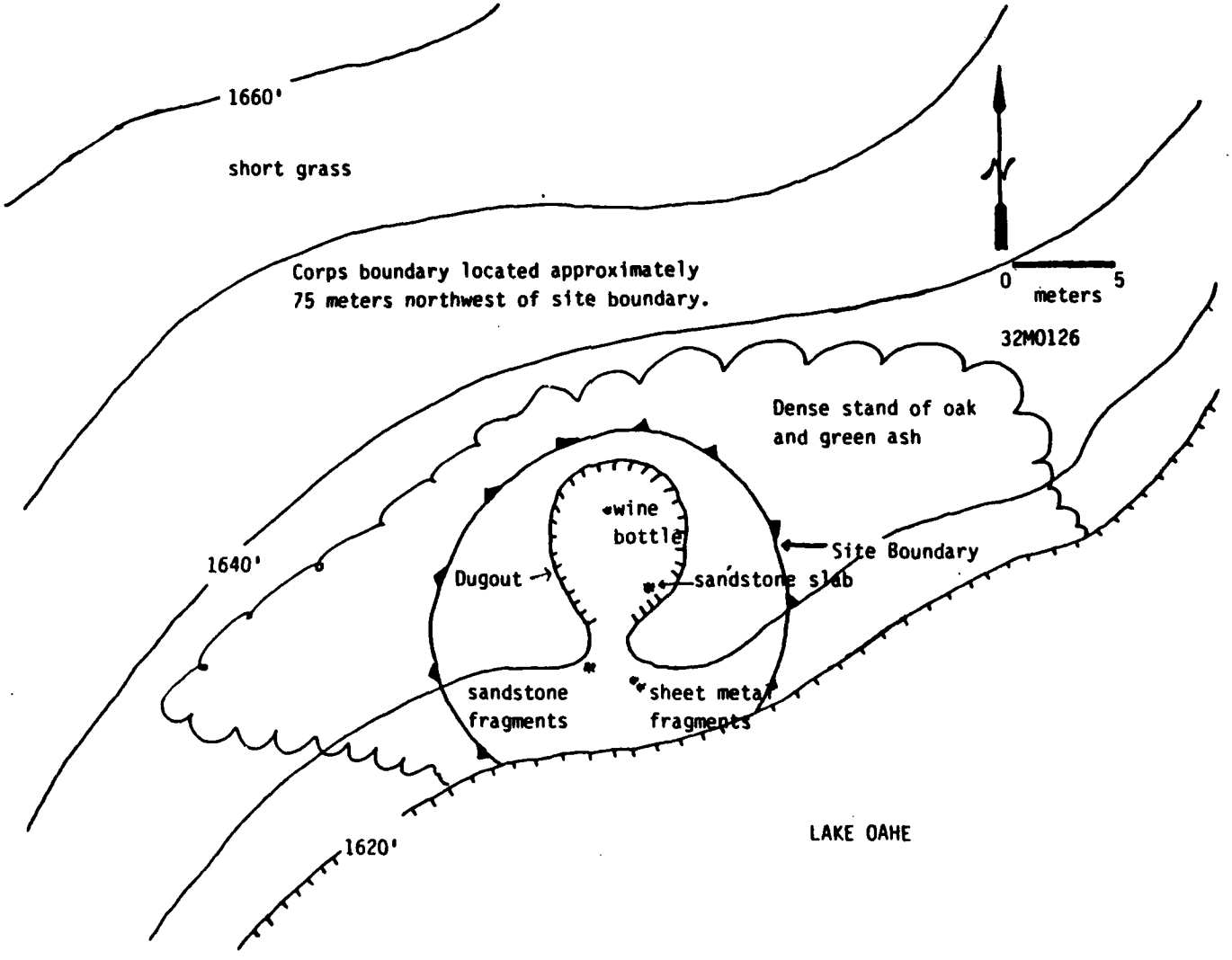


Figure 6.65. Map of 39MO126.

An unidentified building is shown at the site on an 1887 General Land Office survey plot. This property was originally patented to Arthur S. and Marcella Marsh on October 23, 1909. In 1908 the Marshes executed a warranty deed for a right of way for the Missouri River Railroad Company. Subsequent owners have been Robert Ray McKaig (1915); Charles McDonald (1924), the State Treasurer of North Dakota (1927); Alfred S. Dale - trustee (1934); John Rebenitsch Jr. (1934); E.O. Lindstrom (1942); the Federal Farm Management Corporation (1942); John Rebenitsch, Jr. and Theressa Rebenitsch (1945); Frank J. Bendish (1945); Frank J. and Hattie A. Bendish (1949); John J. and Anna Bendish (1953); the Northern Pacific Railroad (1970); and the United States (1970).

The identity of Arthur S. Marsh should be established. An Andrew Marsh and Tom Foley engaged in liquor trade on the east bank with residents of the reservation in the mid-1870s (Milligan 1976:26-27). The continued to operate by permit despite the efforts of Agent Palmer to stop their trade and may have been involved with J. W. Casselbury, who operated a trading post at Fort Yates (Milligan 1976:28-29). It should be noted that the dugout is located in an area of dense vegetation and low visibility. It is conceivable that it represents a west bank liquor cache rather than a habitation.

Based on the early date of this dugout (pre-1887) and its potential to yield significant information on early Euroamerican settlement in this area, this site is believed to be eligible for nomination to the National Register of Historic Places. The site should be protected from further damage as a result of high water from Lake Oahe.

32MO127

This site consists of a stone basement, a foundation, a depression/ dugout, and a cultural material scatter located on the top and side of a small hill (Figure 6.66). A portion of this site, including the foundation, is inundated during periods when the lake is particularly high. Elevation of the site averages 1640 feet. Site area is 800 square meters.

Vegetation at this site includes mixed grasses, chokecherry, buckbrush and wild grape. Visibility at the site was poor. The last recorded channel of the Missouri River is located 335 meters from the site. Some deposition has apparently taken place at the site as sandstone fragments scattered about the site show moderate to heavy sodding. Minimal recreational activity and moderate erosion have preserved the integrity of a large part of this site. A portion of the site is subject to inundation by Lake Oahe.

The site is shown on an 1889 G.L.O. map as the location of "J. B. Marsh." The property was patented to Arthur S. and Marcella Marsh on October 23, 1909. In 1908, the Marshes executed a warranty deed for a right of way for the Missouri River Railroad Company. Subsequent owners have been: Robert Ray McKaig (1915); Charles McDonald (1924); the State Treasurer of North Dakota (1927); Alfred S. Dale - trustee (1934); John Rebenitsch, Jr. (1934); E.O. Lindstrom (1942); the Federal Farm Management Corporation (1942); John Rebenitsch, Jr. and Theressa Rebenitsch (1945); Frank J. Bendish (1945); Frank J. and Hattie A. Bendish (1949); John J. and

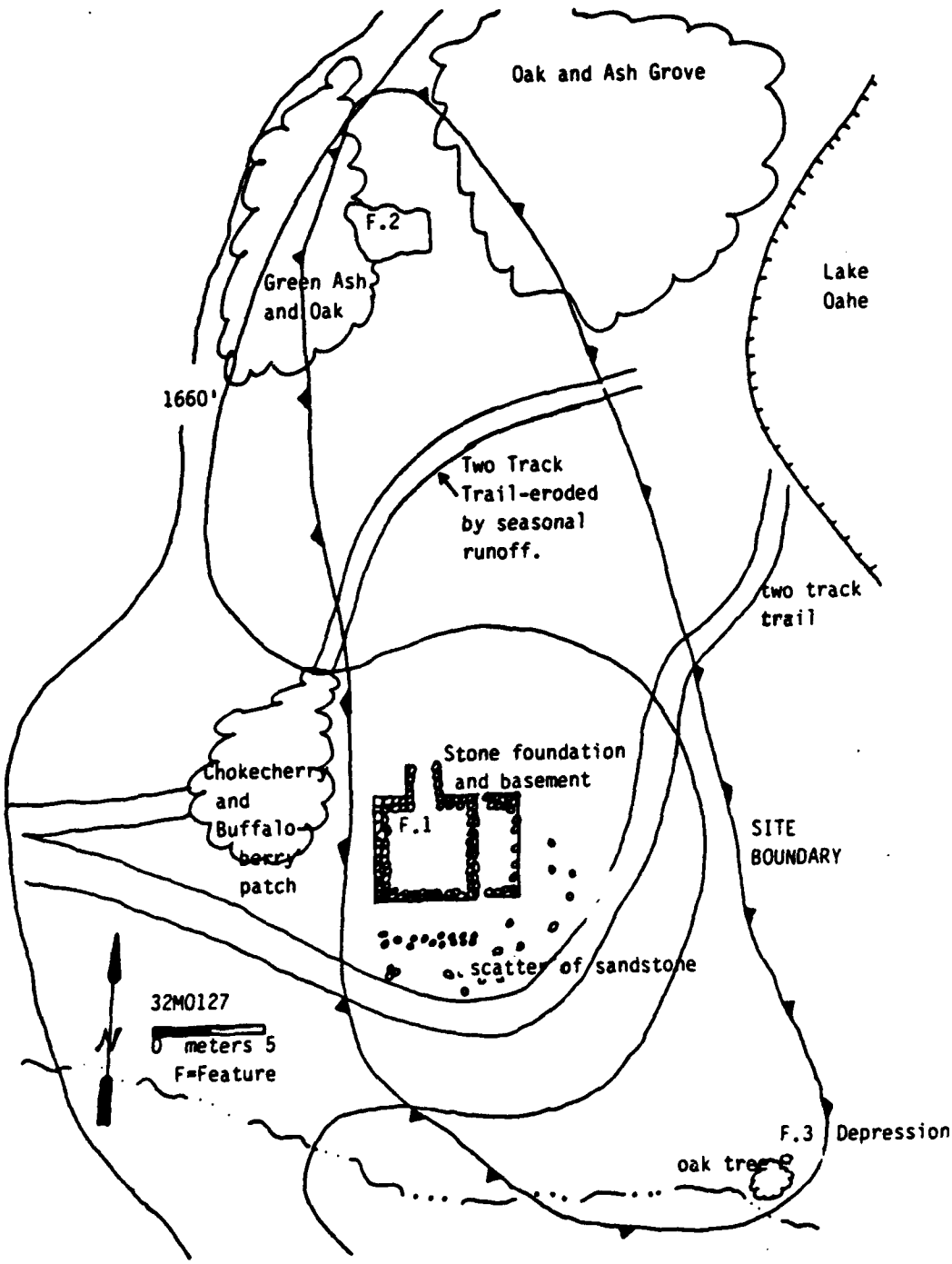


Figure 6.66. Map of 32M0127.

Anna Bendish (1953); and the United States (1970).

The identity of Arthur S. Marsh should be established. An Andrew Marsh and Tom Foley engaged in liquor trade on the east bank with residents of the reservation in the mid-1870s (Milligan 1976:26-27). They continued to operate by permit despite the efforts of Agent Palmer to stop their trade and may have been involved with J. W. Casselbury, who operated a trading post at Fort Yates (Milligan 1976:28-29).

Based on the early occupation date of this site (pre-1889) and its potential to yield significant information on early Euroamerican settlement in this area, this site is believed to be eligible for nomination to the National Register of Historic Places. Efforts should be made to protect the site from further damage as the result of inundation and/or wave action by Lake Oahe.

32MO131

A depression/possible dugout and a cultural material scatter located on a terrace were recorded at this site (Figure 6.67). Site elevation is approximately 1640 feet. Most of the cultural material appears to date after 1920. Visibility was poor at the time the site was recorded. Site area is estimated at 100 square meters. The site is located immediately adjacent to an unnamed seasonal drainage. The drainage is located at an elevation of 1640 feet.

The property was patented to Joseph Rollings on August 9, 1915. Subsequent owners have been: Fred G. Parsons (1917, by guardian deed); John F. Sullivan (1928); Priscilla Hubbard (1928); the State of North Dakota (1939); Priscilla Hubbard (1945); John Lockner (1945); and Katherine Lockner (1952, by final decree of the John Lockner estate).

John F. Sullivan came to Mandan in 1907 and entered into practice with Judge J. M. Hanley. Mr. Sullivan together with Francis Murphy of Fargo were retained by the North Dakota House of Representatives in 1921. Their investigation of the Non-Partisan League's activities concerning the Bank of North Dakota formed a basis for the recall of Governor Lynn Frazier. Mr. Sullivan owned large acreage in a number of counties, including Morton, where he was the owner of the Cannonball Ranch.

The integrity of this site is unknown. Based on the lack of artifactual material or other information that would indicate an earlier occupation, this site is not believed to be eligible for nomination to the National Register of Historic Places.

32MO132

Two depressions, a foundation, a wood frame animal shelter, and a cultural material scatter were recorded at this site (Figure 6.68). Site area is 11,000 square meters. With the exception of the animal shelter and a portion of the cultural material scatter, the features were entirely flooded by Lake Oahe (Figure 6.69). The cultural material scatter includes such items as sheet metal, cut lumber, a crock, reapers or binding

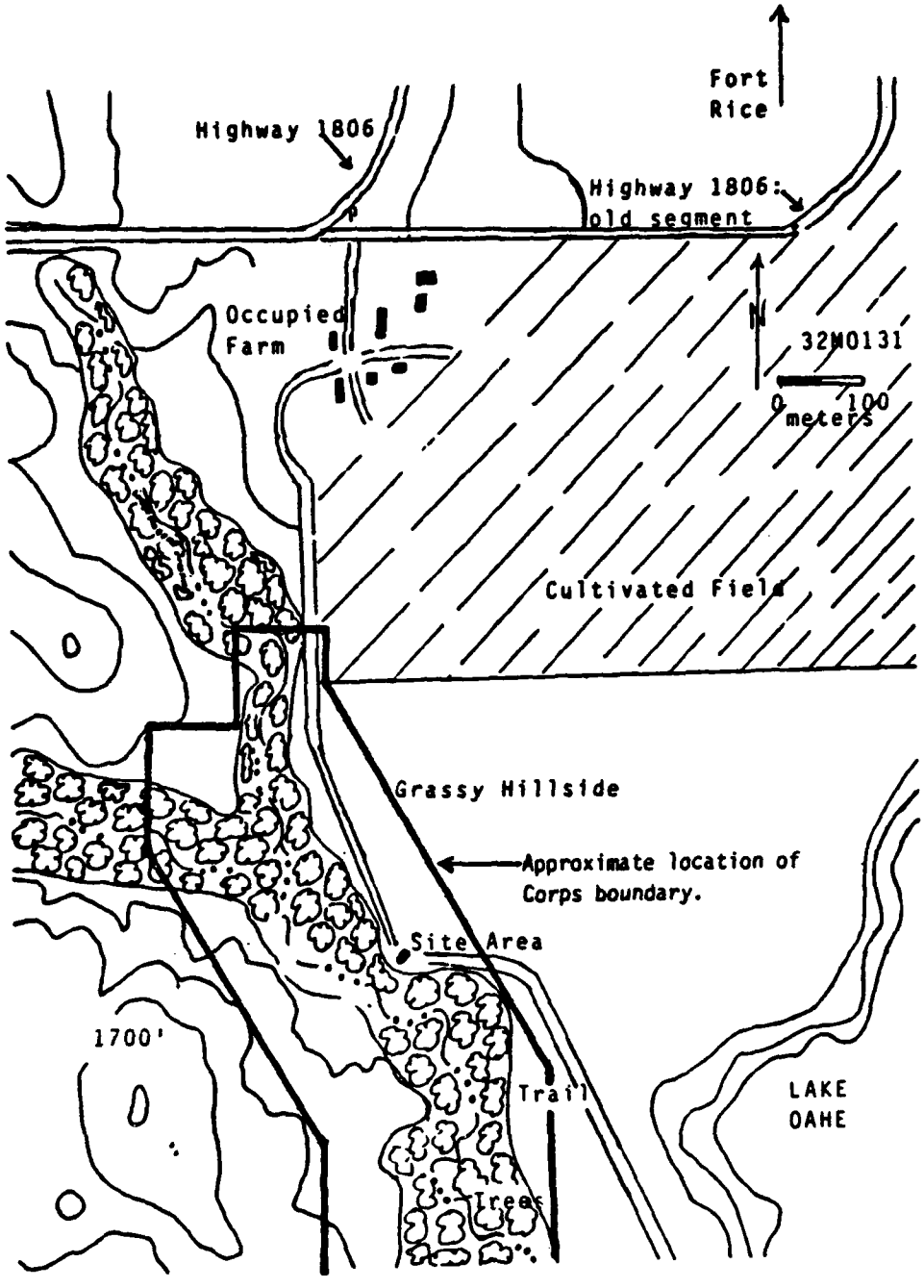


Figure 6.67. Map of 32MO131.

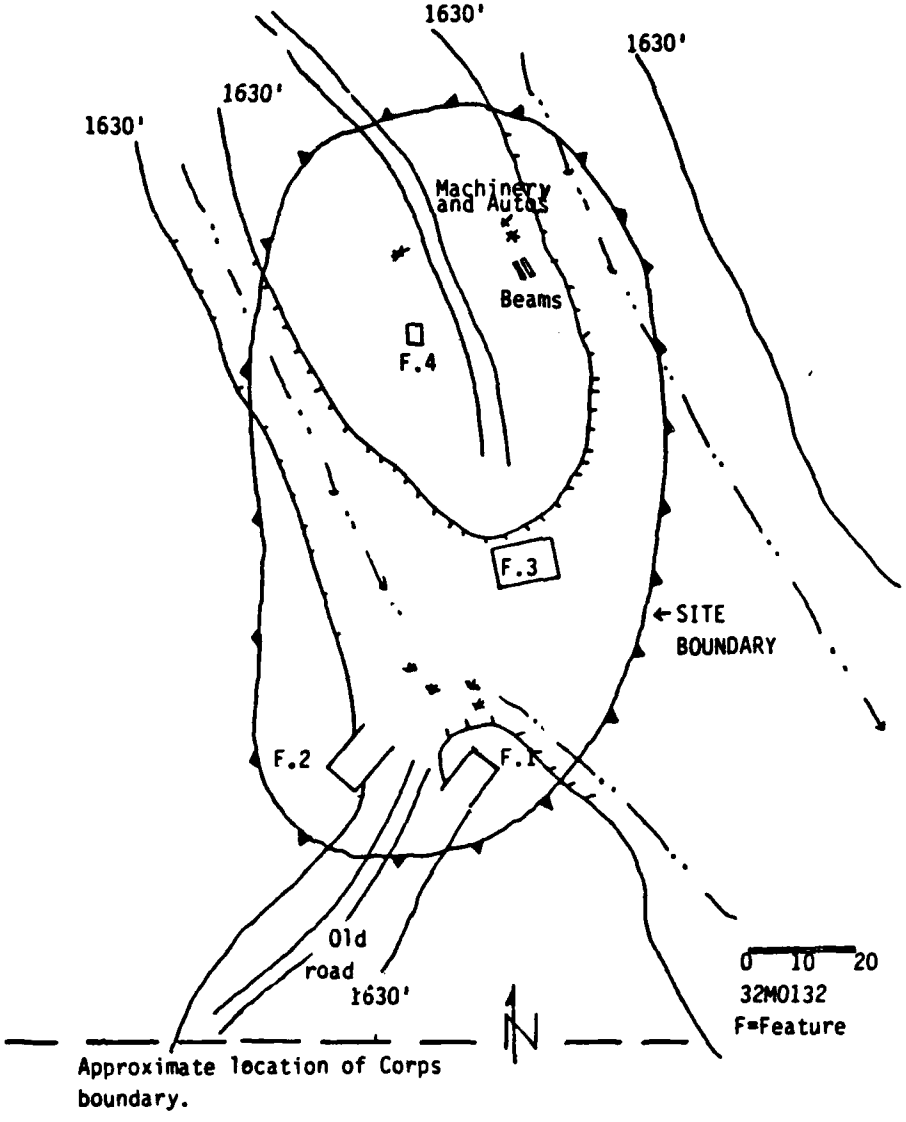


Figure 6.68. Map of 32M0132.

Figure 6.69. Features at 2MB-2.

machines, an enamel pot and cans.

This site is located on a small rise between two branches of an unnamed seasonal drainage. Vegetation consists of mixed grasses and shrubs intermixed with typical riparian community plants. Visibility was poor at the time the site was recorded. Elevation of both the drainage and the site is 1630 feet.

A farmstead of "N.E. Schoonover" is shown at this location on a 1917 atlas and an unidentified building is shown at this location on a 1947 Corps of Engineers map. A 1952 map of site 32MO202 shows the Lockner farm on or near this site. The major portion of the farmstead appears to have been located to the east of the recorded site area.

The property was patented by Maude (La Munion) Boyd on March 5, 1912. Subsequent owners have been: H.A. Ballenger (1913); T. G. Turner (1915); Noah E. Schoonover (1917); Bingenheimer Mercantile Co. (1926, by sheriff's deed); Priscilla Hubbard (1928); the State of North Dakota (1939); Priscilla Hubbard (1945); and John Lockner (1945). Noah Schoonover is somewhat notorious in a local context for having killed an elk in the Fort Rice area but otherwise none of the persons appear to have been outstanding in history.

The site appears to retain very low integrity and does not appear likely to yield important cultural information. Archival sources do not indicate other possible historical significance for this site. This site does not appear to be eligible for nomination to the National Register of Historic Places.

LT684-116IF

This isolated find is a Knife River flint tertiary flake, size grade 2 (i.e., greater than or equal to one-quarter inch but less than one-half inch in size).

LT684-117IF

This isolated find is a .44 cal. Winchester "Pointed" or "Flat" cartridge casing. The headstamp is an "H" with a circle around it. The casing has been struck by a double firing pin. For greater discussion of this cartridge type see the site description of 32SI53 in T. 130 N., R. 79 W.

LT684-122IF

This isolated find is a Knife River flint biface midsection.

TOWNSHIP 137 NORTH, RANGE 79 WEST

32M016

Will and Hecker (1944:97) referenced both the prehistoric and what is now the historic components of the site: "In Joe Ripple's [sic] farm yard considerable evidence of a village site shows on the surface over an area of about 8 acres. The surface is obliterated and excavation would be necessary to determine presence of lodge ruins. The potsherds are of the Middle Mandan Period type." Subsequent references to this site appear in Cooper (1953), Jensen (1965) and Adamczyk (1975).

The 1984 survey recorded a very sparse cultural material scatter consisting of lithic debitage, fire-cracked rock, bone and a few ceramic sherds (Figure 6.70). The sherds appear to be Plains Village. The site area is in a cultivated field above the Missouri bottoms at an elevation of approximately 1640 feet. Visibility at the site is good. A small seasonal drainage forms the southern boundary of the site.

The majority of the prehistoric component appears to be in the plowed field and along a farm trail. Other portions may be present in the undisturbed grassland within the site area. The prehistoric component has an area of 3450 square meters.

The integrity of the prehistoric component of this site appears to be quite poor. The site appears to have been a sparse scatter of materials to begin with and cultivation and road damage have impacted much of the site area. This site is not believed to be eligible for nomination to the National Register of Historic Places due to lack of physical integrity.

The historic component of this site is apparently the remains of Joe Rippel's farmstead (Will and Hecker 1944:97). It consists of at least three foundations, a well, a depression, two trash dumps, and a cultural material scatter. Site area of the historic component is 7000 square meters. Archival and physical site information indicate this site probably dates to the period extending from 1900-1950.

The property was patented to Martin Rippel on September 22, 1908. Subsequent owners have been: A.D. Clarke and Company (possibly a mortgage assignee, 1903); Joseph Rippel (1918); Morton County (1934); and Joe and Anna Rippel (1961).

The historic component of this site has been disturbed by bulldozing and all buildings have been removed. None of the persons associated with this site appear to have been particularly important in history and archival sources do not indicate other possible historical significance for this site. Therefore, the historic component of this site does not appear to be eligible for nomination to the National Register of Historic Places.

32M0129

This site consists of a very small lithic scatter of 19 flakes of Knife River flint on a small knoll (Figure 6.71). Site elevation is 1650 feet.

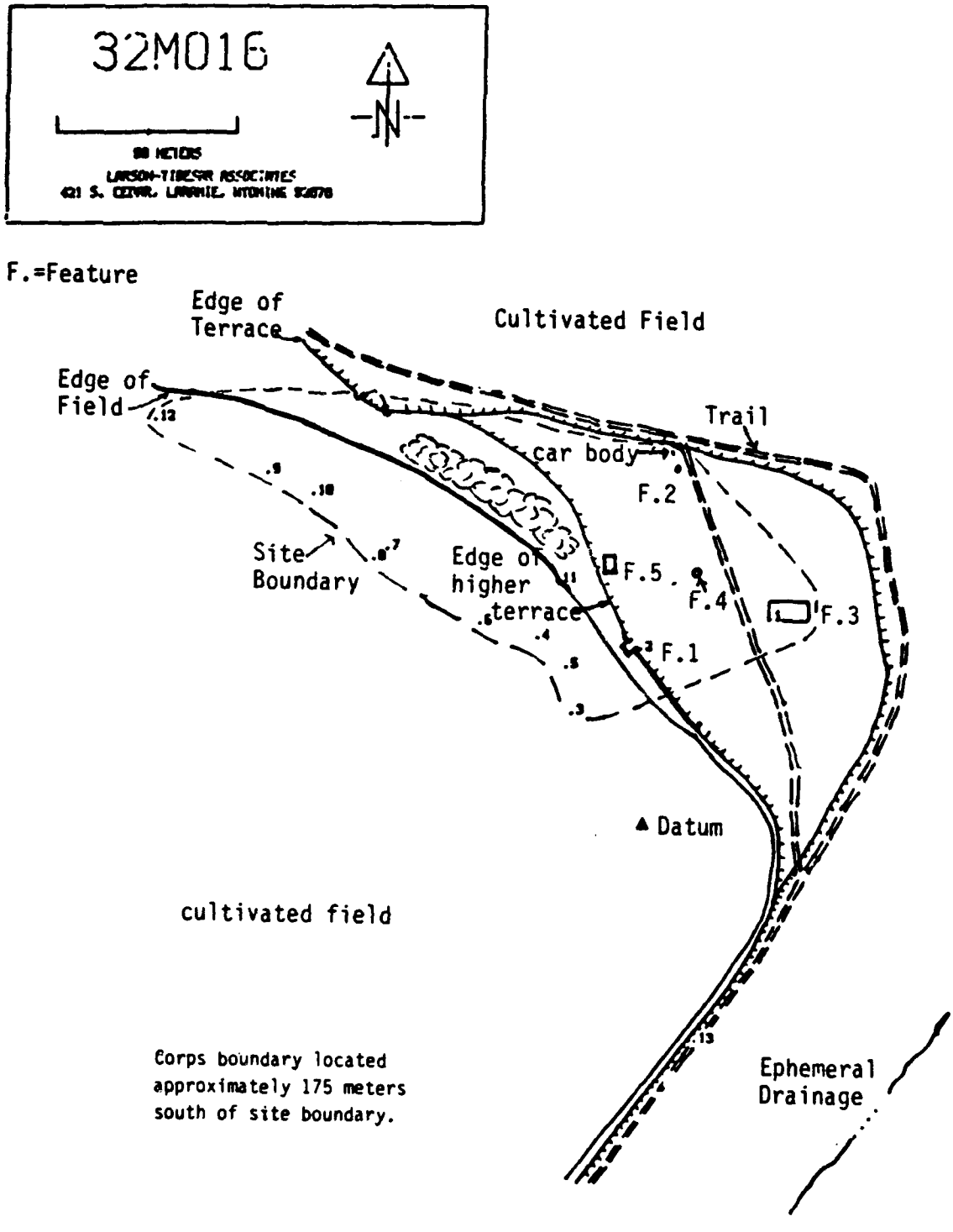


Figure 6.70. Map of 32M016.

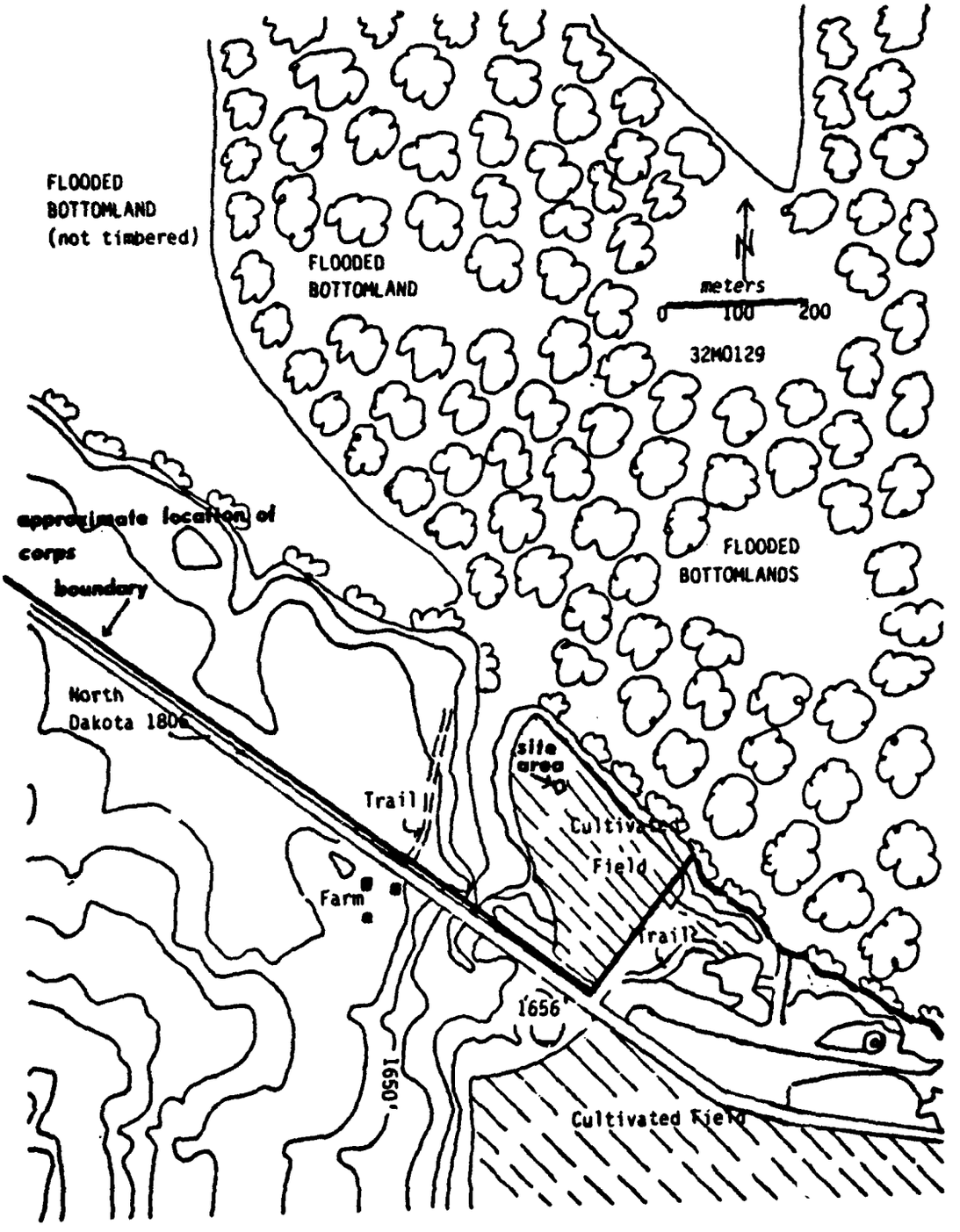


Figure 6.71. Map of 32MO129.

Site area is approximately 20 by 20 meters. No features or diagnostic items were observed.

The site area is within a cultivated field (Figure 6.72). Riparian habitat is present to the east of the site and grasslands to the north. Visibility was fair. An unnamed seasonal drainage is located 200 meters from the site at an elevation of approximately 1630 feet.

The integrity of this site is very poor. It has been under cultivation for a long time and appears to be entirely a surface manifestation. This site is not considered eligible for nomination to the National Register of Historic Places and no further work is recommended.

LT684-4IF

This isolated find is a Tongue River silicified sediment secondary flake, size grade 4 (i.e., greater than or equal to one inch but less than two inches in size).

LT684-51IF

This isolated find consists of rough-hewn boards. It may represent sawmill debris.

TOWNSHIP 137 NORTH, RANGE 80 WEST

32MO19, The Bernhard Schmidt Farmstead Site

Site 32MO19 consists of an extensive prehistoric component as well as the remains of an historic occupation. Site area is 45,000 square meters The site is on a cultivated terrace above the Missouri bottoms at an elevation of approximately 1670 feet. A small intermittent drainage forms the southeastern boundary of the site. Visibility was good at the time the site was recorded. A map of this site is presented as Figure 6.73.

The prehistoric portion of 32MO19, the Bernhard Schmidt site, appears to be the remains of a large Plains Village occupation. The site is in a cultivated field and consists of a moderate scatter of lithics, ceramics, fire-cracked rock and bone debris. Will and Hecker were the first authors to describe the site:

> This site covered 10 to 12 acres and a small portion has caved into the river. Lodge floors and cache pits show in the cut bank and several lodge pits show on the edge of the bluff. The balance of the site has been under cultivation for 30 years and little shows on the surface except village refuse. There are no indications of ditch or palisade showing today. The potsherds are of early Mandan types [Will and Hecker 1944:97].

Figure 6.42. Site area [illegible].

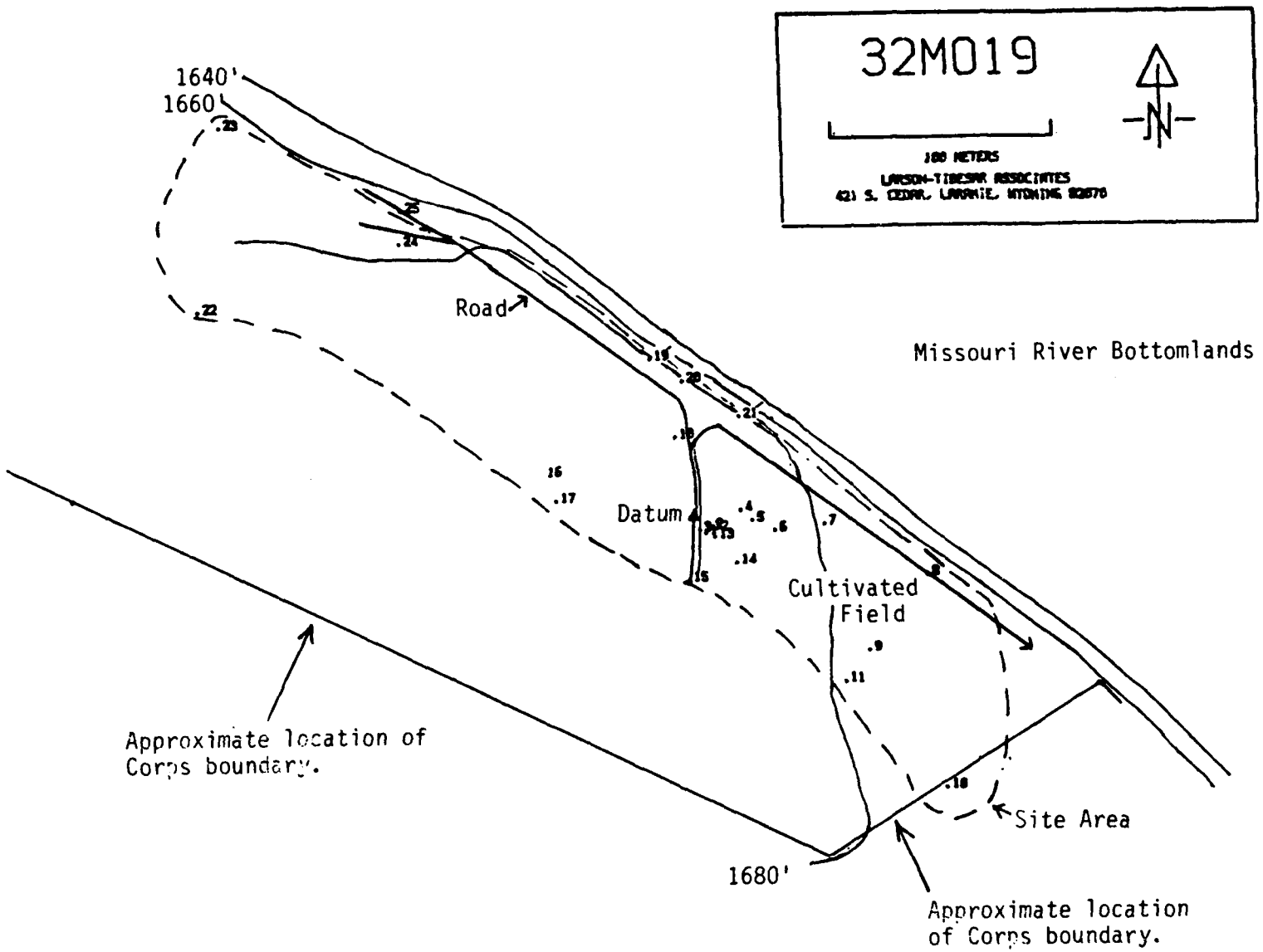


Figure 6.73. Map of 39M019.

Rim sherds examined include Riggs Plain (Figure 6.74a), Riggs Decorated Lip (Figure 6.74b), Riggs Filleted Rim (Figure 6.74c) and Fort Yates Cord Impressed (Figure 6.74d) wares, probably indicating some type of Middle Missouri occupation. The lack of fortifications and the dispersed nature of the site may indicate Extended Middle Missouri.

There is some question whether some of the area described above is also part of what was recorded as 32MO205. Most, if not all, of 32MO205, however, is believed to have been destroyed by gravel operations of private land southeast of 32M019. Earlier locational information on both sites is limited and the exact nature of what was recorded as 32MO205 may never be completely understood.

Although the site has been extensively cultivated, bank erosion has been minimal. Cultural material observed in the field appears to be in definite concentrations, perhaps indicating the location of lodges, cache pits and middens. The prehistoric component of this site should be tested to determine its integrity, research potential, significance and eligibility for nomination to the National Register of Historic Places.

The historic component of 32M019 appears to be the remains of a farmstead or to have been associated with farming activities in the horse-drawn farming period, roughly 1885-1930. The site area contains remains of a horse-drawn drag, the remains of a wooden and metal haystack frame and a trash deposit of modern crimp cans. An unidentified building is shown near the site on 1947 Corps of Engineers maps and on the current U.S.G.S. map.

The site area was patented to Stephen Gruber on January 28, 1880. Subsequent owners have been: E. Hallenbeck (1884); the Riverside Ranch Company (1886); W.A. Knight (1895); J.H. Watts (1900); Joseph Schmidt (1900); Henry B. Schmidt (1917); and Johanna Schmidt, et al. (1934, final decree on the Henry Schmidt estate).

The Riverside Ranch Company was owned by lumbermen from Saginaw, Michigan. The foreman was J.S. Green, who was later replaced by Steve Weikes. The ranch ran approximately 2000 head of cattle and horses. Joseph Schmidt came with his wife Eva to Dakota Territory in 1881 and homesteaded south of Mandan. In 1900, he purchased the Riverside Ranch, which he operated until 1923. Schmidt's residence was apparently southwest of the area of 32M019. Archival sources and physical site information do not indicate that the historic component of the site was either a farmstead or a domicile. Due the lack of historical significance and poor physical integrity, the historic component is not believed to be eligible for nomination to the National Register of Historic Places and no further research is recommended.

32MO20, Schmidt Mounds

The area discussed as 32MO20 is a locality which has variously been recorded as 32MO20, 32MO67, and 32MO203. The areas are all discussed as a single site because the original sketch map of the site done by R.W. Neuman for 32MO20 appears to encompass or partially overlap areas recorded by other investigators as 32MO67 and 32MO203.

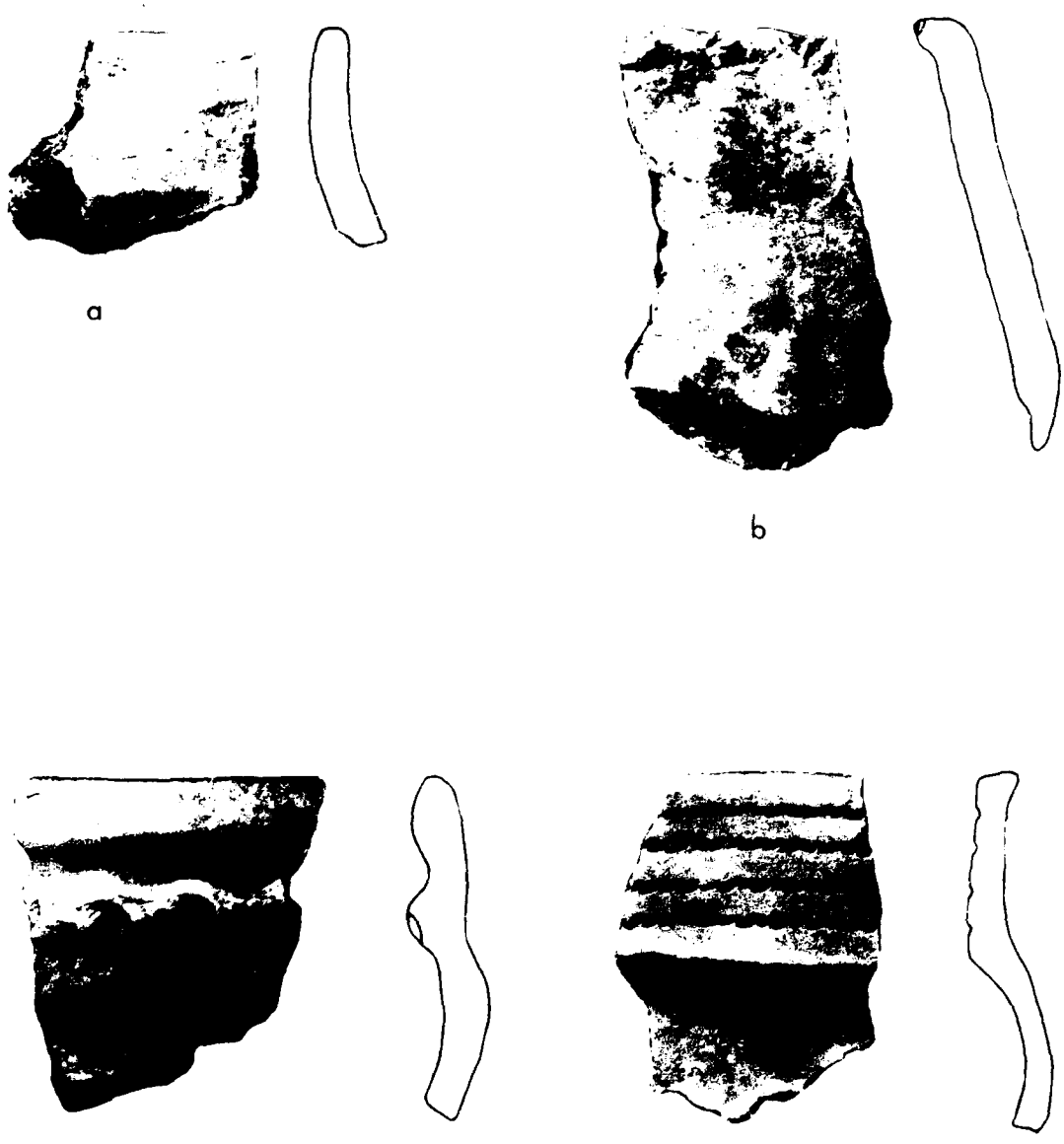


Figure 6.74. Artifacts from 22M019 (actual size).

The Schmidt site, 32MO20, is an extremely large site (approximately 2,006,706 square meters) consisting of at least nine conical burial mounds and associated occupation areas. Since only a very small portion of the site is on Corps property, investigations of the site in 1984 were quite restricted. Neuman (1975:79) discusses the Schmidt site as being potentially related to the Sonota complex:

> One of the archeological horizons at the Schmidt Site (32MO20) consists of eight, widely scattered, low tumuli resting on a high, sloping terrace above a broad expanse of Missouri River bottomland near the juncture of the Missouri and the Heart rivers in Morton County, North Dakota. In August 1960, the landowner permitted me to dig a limited test into one of these mounds. The mound selected measured 75 feet in diameter and had a maximum apical height of 1.3 feet. Excavations exposed a portion of a partially articulated bison skeleton lying on the mound floor near the edge of the centrally located, subfloor burial chamber. Also on the mound floor near the pit edge were a number of limestone slabs and broken segments of logs, some of which were charred. Only a portion of the burial chamber could be excavated. It extended to a depth of 3.6 feet below the original ground surface, had vertical walls and a flat bottom, and indications are that it was ovoid in plan. Only a secondary human interment, of an adult male, was exposed, and the skeletal remains consisted of a skull and a nearby stack of long bones lying on the pit floor. Three broken artifacts of Knife River Flint were recovered from the burial pit fill. They comprise two knife fragments and most of the distal portion of a triangular projectile point. These objects can be duplicated by other specimens from Sonota Complex sites, and with this data on hand I believe that Mound 1 from the Schmidt Site should be included in the same complex.

In the recording of 32MO203 in 1952, Farrell and Hoffman describe the site as "extensive surface material" (original River Basin Survey form). Ralph S. Thompson recorded the same area again in 1980 and it was assigned the site number 32MO67. At that time both the mounds and the scatter of cultural materials were described. The 1984 Larson-Tibesar investigations confirmed that the cultural materials extend to the terrace edge and on to Corps of Engineers property (Figure 6.75 and 6.76). All mound features, however, appear to be on private land. Surface visibility was good at the time this assessment was made.

All indications from both the testing and the surface materials indicate that the site has a high degree of integrity. Although the site has been extensively cultivated for many years, Neuman's testing indicates that the mounds are still in good condition. The test excavations carried out by Neuman indicate that the Schmidt site has a high research potential. The site could contribute greatly to the understanding of Woodland complexes in the Middle Missouri subarea. Site 32MO20 should be considered eligible for nomination to the National Register of Historic Places.

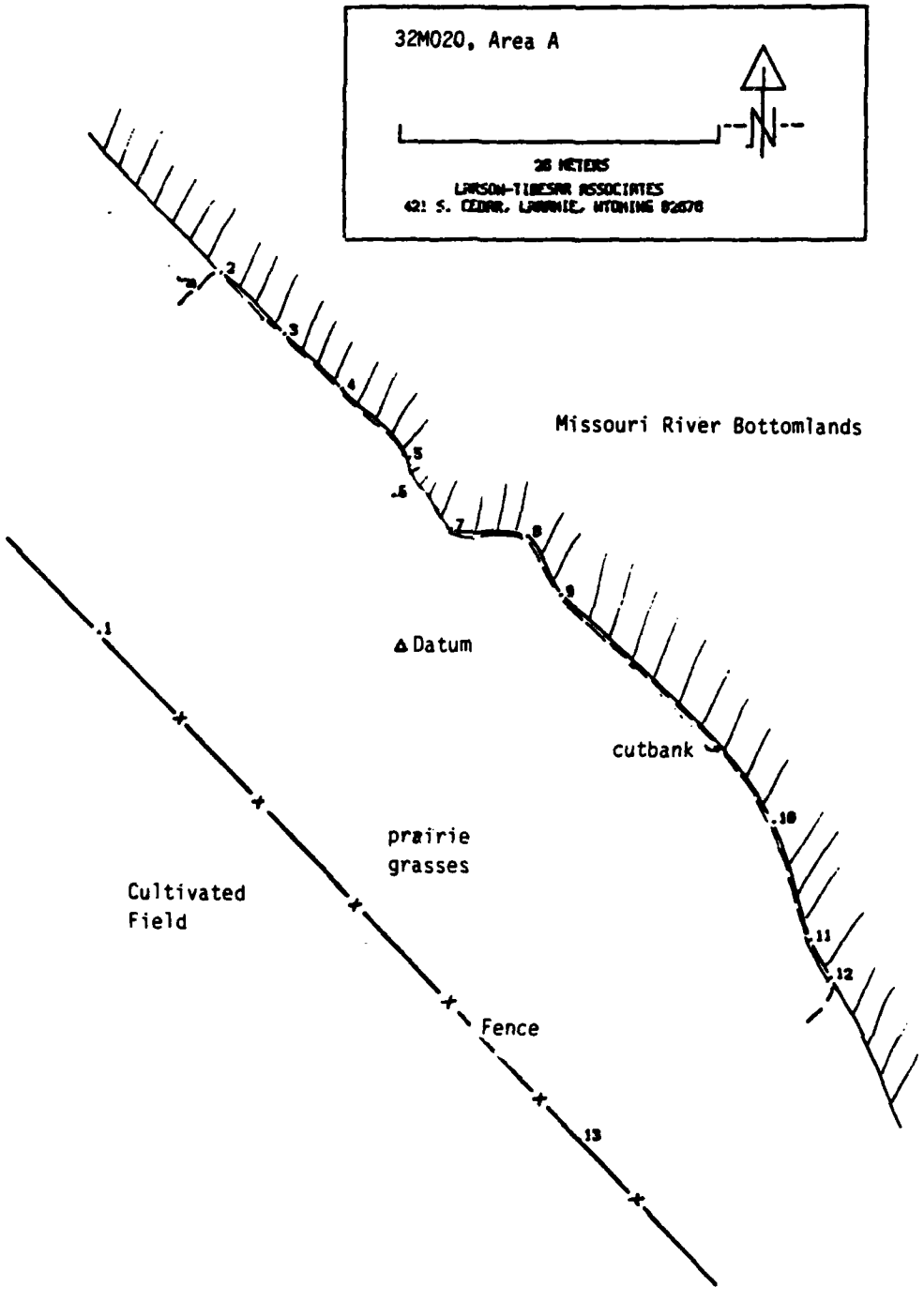


Figure 6.75. Map of 32M020, Area 1.

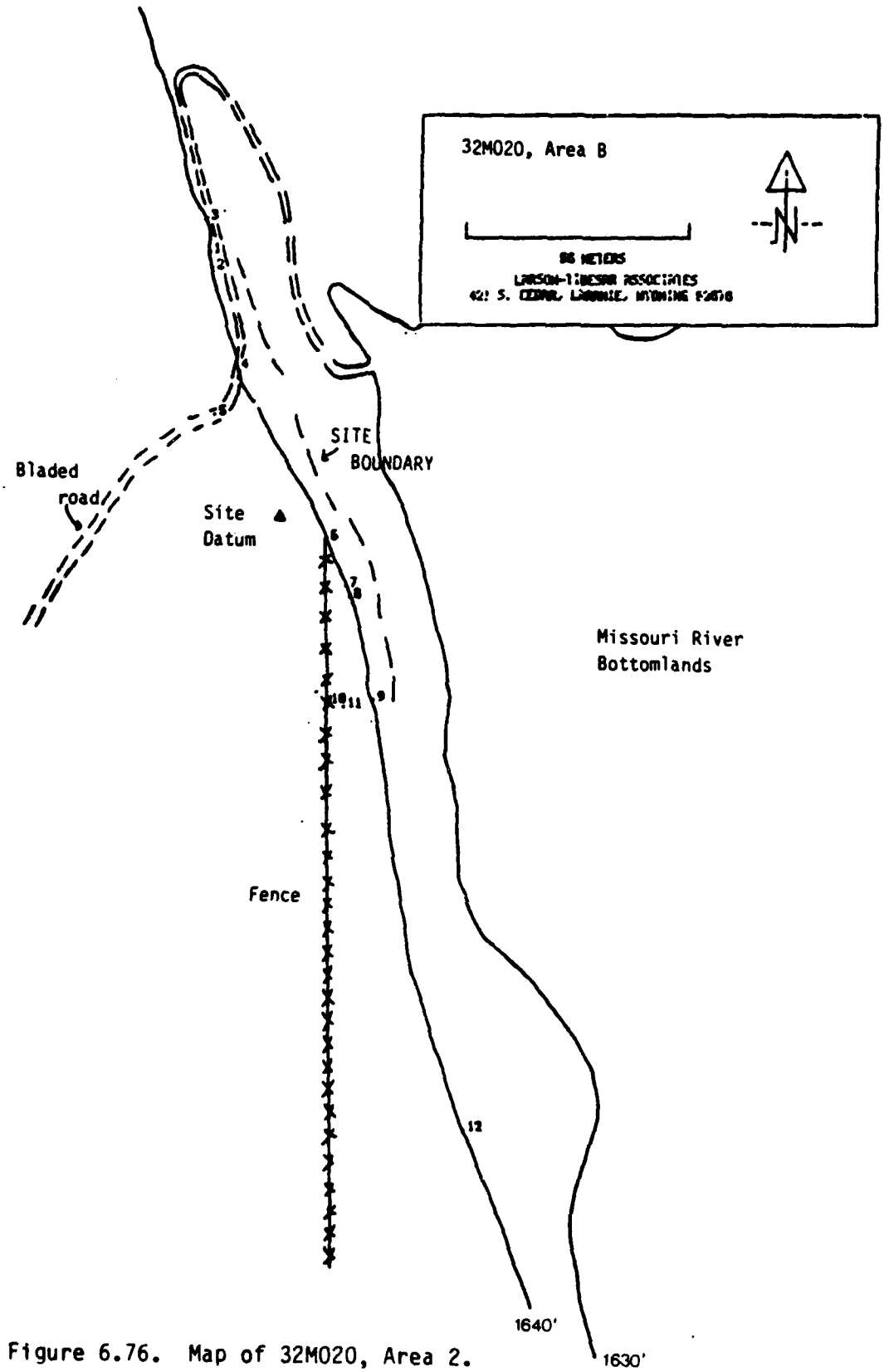


Figure 6.76. Map of 32M020, Area 2.

32M0114

This site consists of a rectangular depression and an associated trash scatter on the north side of the Little Heart River. Site area is 650 square meters. The site is situated on a small peninsula of land formed by a bend in the river (Figure 6.77). The depression is near the center of the site (Figure 6.78). The feature contains pieces of poured concrete and cut lumber. The cultural material scatter observed at this site consists of pieces of concrete, rolled barbed wire, some woven wire, modern cans and glass bottles. There is also a scatter of wooden parts of farm wagons in the southeast end of the site. With the exception of these wagon parts, none of the artifacts observed at the site appear to predate 1930.

The Little Heart River is located approximately ten meters from the site. Vegetation in this area includes a dense cover of grasses, shrubs and trees. Visibility was poor. The Little Heart River is located at an elevation of 1630 feet. The elevation of the site varies from 1630 feet to 1640 feet.

The site does not appear to retain good integrity. It has apparently been eroded over the years and cattle have also trod through the area. This site appears to be a general dump from the last 50 years and probably does not contain materials likely to yield important cultural information. This site apparently does not contain in situ building remains.

The property was patented to Walter Gossard on February 25, 1925. Some lots were patented to Fred L. Conklin on March 6, 1925. Subsequent owners have been: the heirs of Walter Gossard (1925, quit claim deed); Doris Gossard, et al. (1929); Anton J. Belohlavek (1935); John M. Belohlavek (1940); Anton J. and Mildred F. Belohlavek (1945); Joseph Koppy (1952, Michael Koppy, Trustee); Fred C. and Laura Kist (1961); and the United States (1964).

None of the persons associated with the site appear to have been particularly important in history and archival sources do not indicate other possible historical significance for the site. This site is not believed to be eligible for nomination to the National Register of Historic Places and no further research is recommended.

32M0115

Located in a plowed field, this site consists of two concentrations of lithic debitage, tools, bone and fire-cracked rock (Figure 6.79). Site area is 5000 square meters. With the exception of these concentrations, no other features were observed on the surface of this site. A photograph of this site is presented as Figure 6.80.

The site is located on the top and the side of a terrace above the Little Heart River. Elevation is approximately 1630 feet. The river is located 100 meters from the site at an elevation of 1630 feet.

The field was in wheat at the time the site was recorded. Wind breaks constructed of Russian olive were also observed. Visibility was excellent at the time the site was recorded.

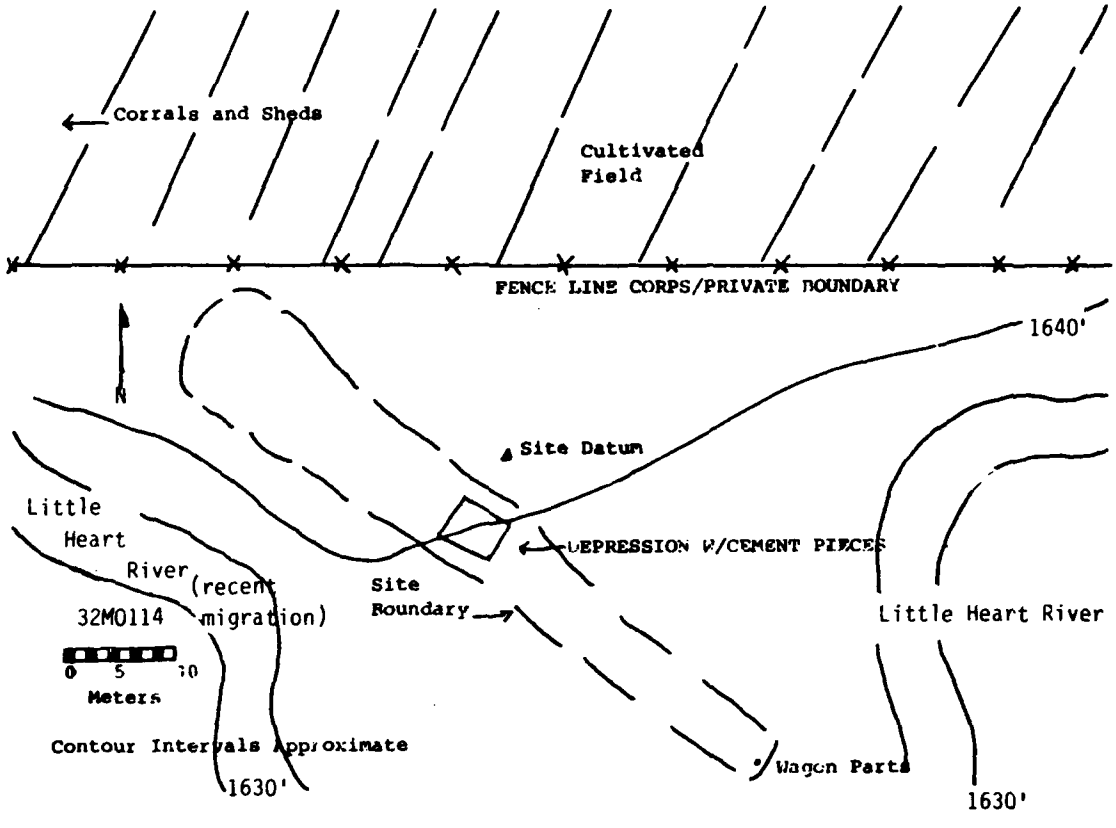


Figure 6.77. Map of 32MO114.

Figure 6.18. Site area of 32MO114.

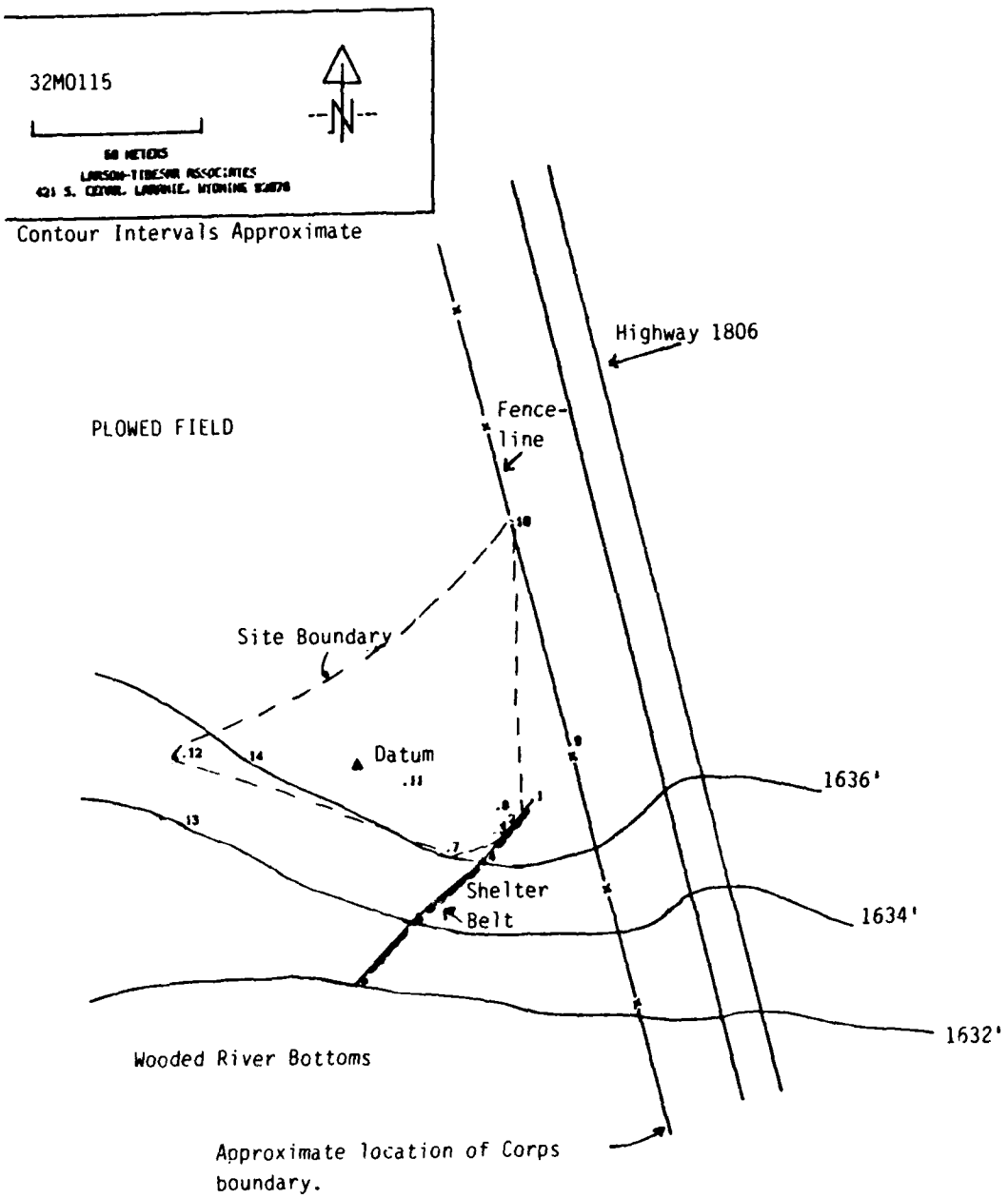


Figure 6.79. Map of 32MO115.

AD-A207 630 A CULTURAL RESOURCE INVENTORY OF THE RIGHT BANK OF LAKE 3/3
OAHE IN MORTON AN..(U) LARSON-TIBESAR ASSOCIATES
LARAMIE WY D M PENNY ET AL. NOV 87 L/T-6-84-VOL-1
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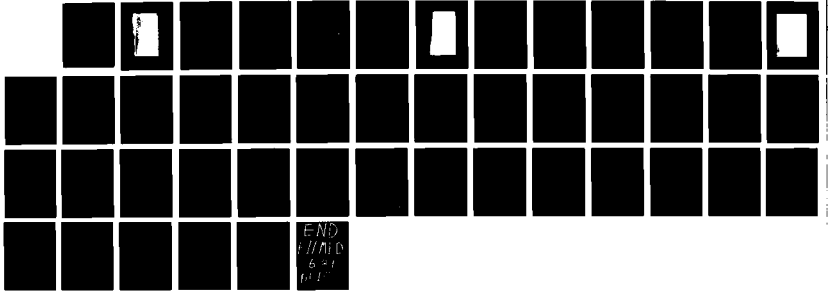

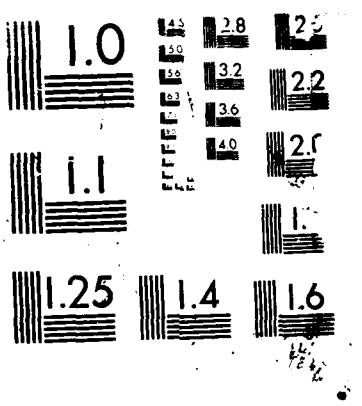
1.0
1.1
1.25
1.4
1.6
2.8
3.2
3.6
4.0
2.2

All tools observed on this site were manufactured of Knife River flint. The only other lithic material observed on the site was Tongue River silicified sediment.

The significance of the site is not known. Test excavations of the lithic concentrations should be conducted to determine the integrity and potential for additional buried cultural deposits.

32MO116

This site consists of a sparse scatter of lithic debitage (Figure 6.81). This site is located adjacent to the Little Heart River. Total site area is 5690 square meters. Elevation for both the site and the river is 1630 feet. The cultural material is visible within the bare areas of a cultivated field. The field was in wheat at the time the site was recorded. Visibility varied from poor to good.

One small concentration of Knife River flint debitage was observed. In addition to this concentration, gray Tongue River silicified sediment, diorite and other Knife River flint debitage were observed on the surface of this site. No tools were observed.

Cultural material appears to be extensively disturbed by agriculture. Some intact subsurface deposits may be present. This site should be tested to determine if intact subsurface deposits exist beneath the plow zone and to assess their extent.

32MO118

This site is apparently an abandoned farmstead which now consists of nine foundations, one depression, a well and both horse-drawn and later farm machinery, rubber tires, snow fence, and other domestic and farming items (Figure 6.82). The site covers an area of 14,000 square meters. All the buildings have been removed and most of the foundations have been bulldozed. This site appears to be a post-1930 farmstead.

The site is located on a terrace above the Missouri River bottoms at an elevation of 1640 feet. An unnamed seasonal drainage is located 107 meters north of the site at an elevation of 1620 feet. At the time the site was recorded, vegetation was a dense cover of mixed grasses and visibility was poor.

The property was patented to Joseph Graner on October 8, 1915. Subsequent owners have been: Andrew Graner (1929, administrator's deed); and Andrew C. Graner (1943, patent from State of North Dakota).

The site exhibits poor integrity and does not appear likely to yield important cultural information. None of the persons associated with the site appear to have been particularly important in history and archival sources do not indicate other possible significance for the site.

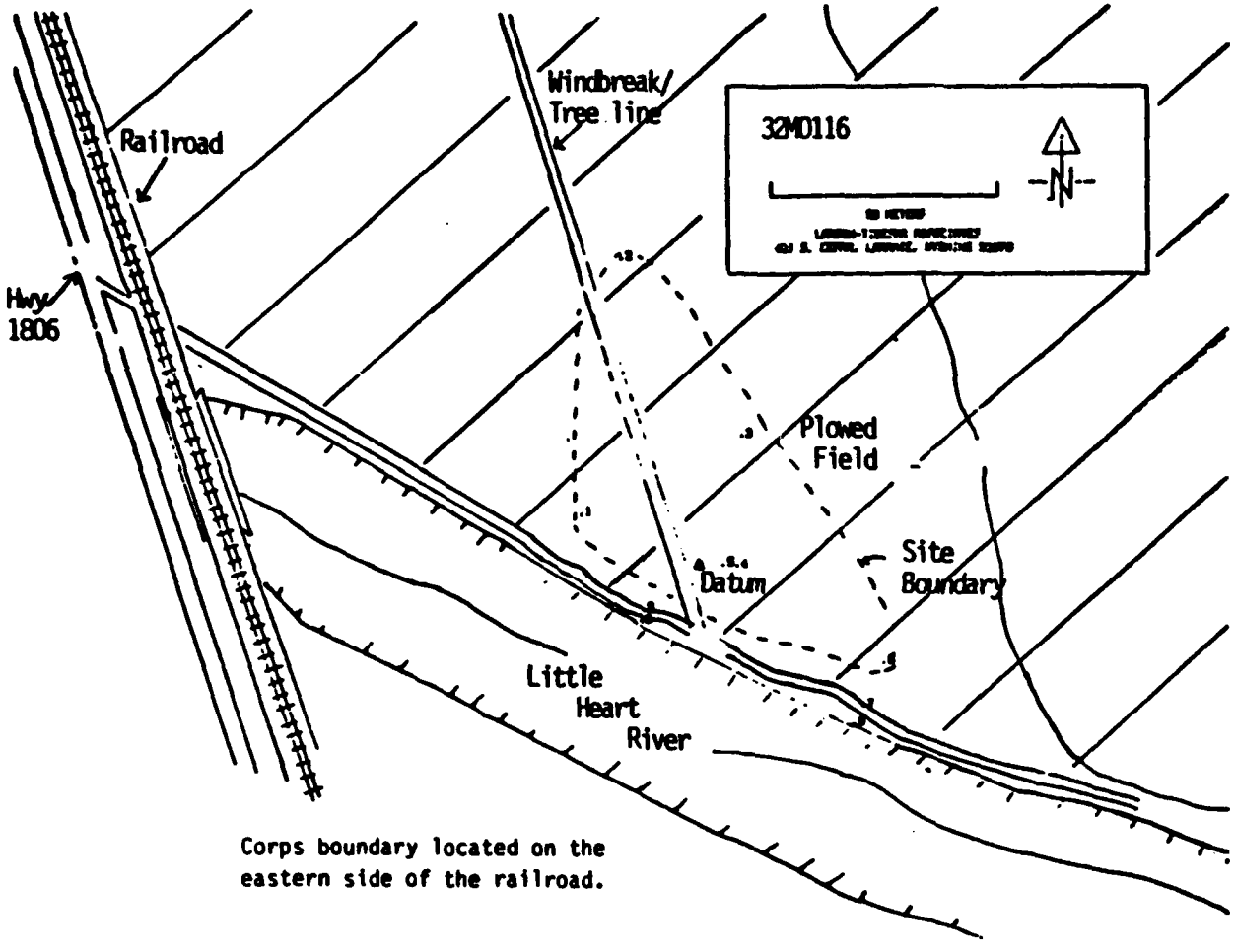

Figure 6.81. Map of 39M0116.

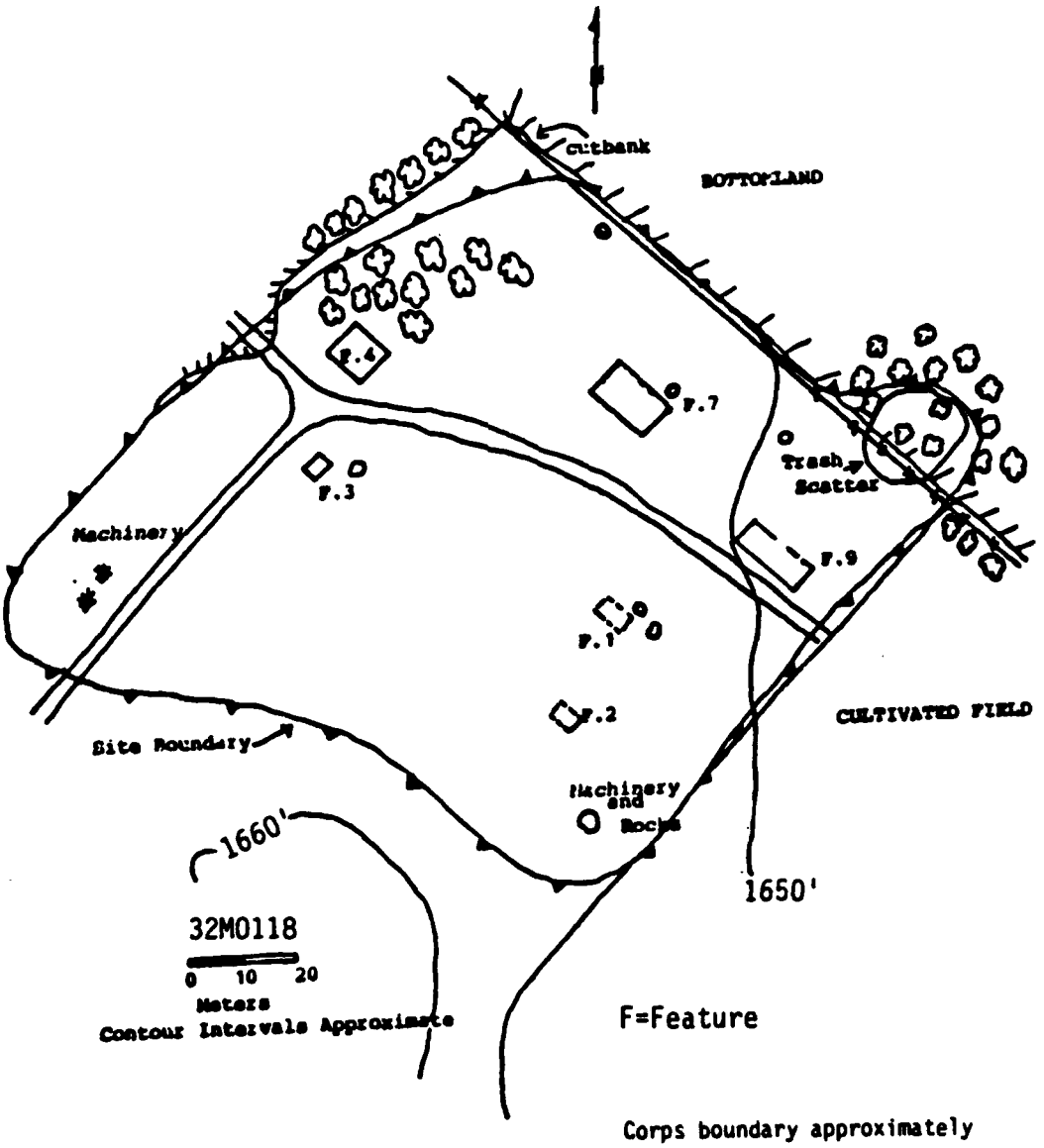

Figure 6.82. Map of 32M0118.

32M0119

A light scatter of cultural material occurring parallel to the edge of a low terrace was recorded at this site (Figure 6.83). The site occupies an area approximately 280 x 30 meters. Cultural material on the site consists mostly of bone fragments, debitage of Tongue River silicified sediment and a few fragmentary pieces of ceramics and shell. Ceramics on the site indicate a Plains Village age occupation. A small fragment of a Fort Yates Cord Impressed rim was collected from the surface of this site. In addition to the cultural material, there are approximately 40 pieces of grey Tongue River silicified sediment shatter within the area. It could not be determined if these pieces are cultural in origin.

The site is located in a cultivated field bordered by a Russian olive shelter belt (Figure 6.84). Visibility was excellent. Site elevation is 1630 feet. The site is located 427 meters from the last recorded channel of the Missouri River.

Although much of the site has been disturbed by cultivation and perhaps by the railroad, there are several concentrations of cultural material showing up in the field and these may indicate that some materials remain intact below the surface. Limited testing should be conducted at this site to determine its significance and eligibility for nomination to the National Register of Historic Places.

32M0120

This site is the probable remains of a farmstead located on a terrace above the now flooded Missouri River bottoms. It consists of a poured concrete foundation, a cellar filled with refuse, and a small depression (Figure 6.85).

The site covers 1000 square meters of Corps of Engineers property at an elevation of 1630 feet. A gravel pit is located immediately adjacent to the site on private land. It is conceivable that the earliest site settlement may be related to gravel extraction. All the buildings have been removed. There is no indication in the cutbank or the beach level that any of the site has been destroyed by inundation. The greatest portion of this site appears to be on private land. The condition and extent of the private portion are unknown.

Vegetation at the site includes a dense cover of grasses, shrubs and trees. Visibility was extremely poor at the time the site was recorded. The last recorded channel of the Missouri River is located 120 meters from the site.

A structure labeled "Fogarty's" is shown at this location on the 1878 General Land Office survey plat. The property was deeded to the Northern Pacific Railroad on September 7, 1883, by Willis H. Gilbert. It was patented by Northern Pacific on August 7, 1899. Subsequent owners were: Elijah Hallenbeck (1884); the Riverside Ranch Company (1886); W.A. Knight (1895); J.H. Watts (1900); Joseph Schmidt (1900); Lawrence Schmidt (1928); and Gregor Schmidt (1942).

Figure 6.83. Site area of 32M0119.

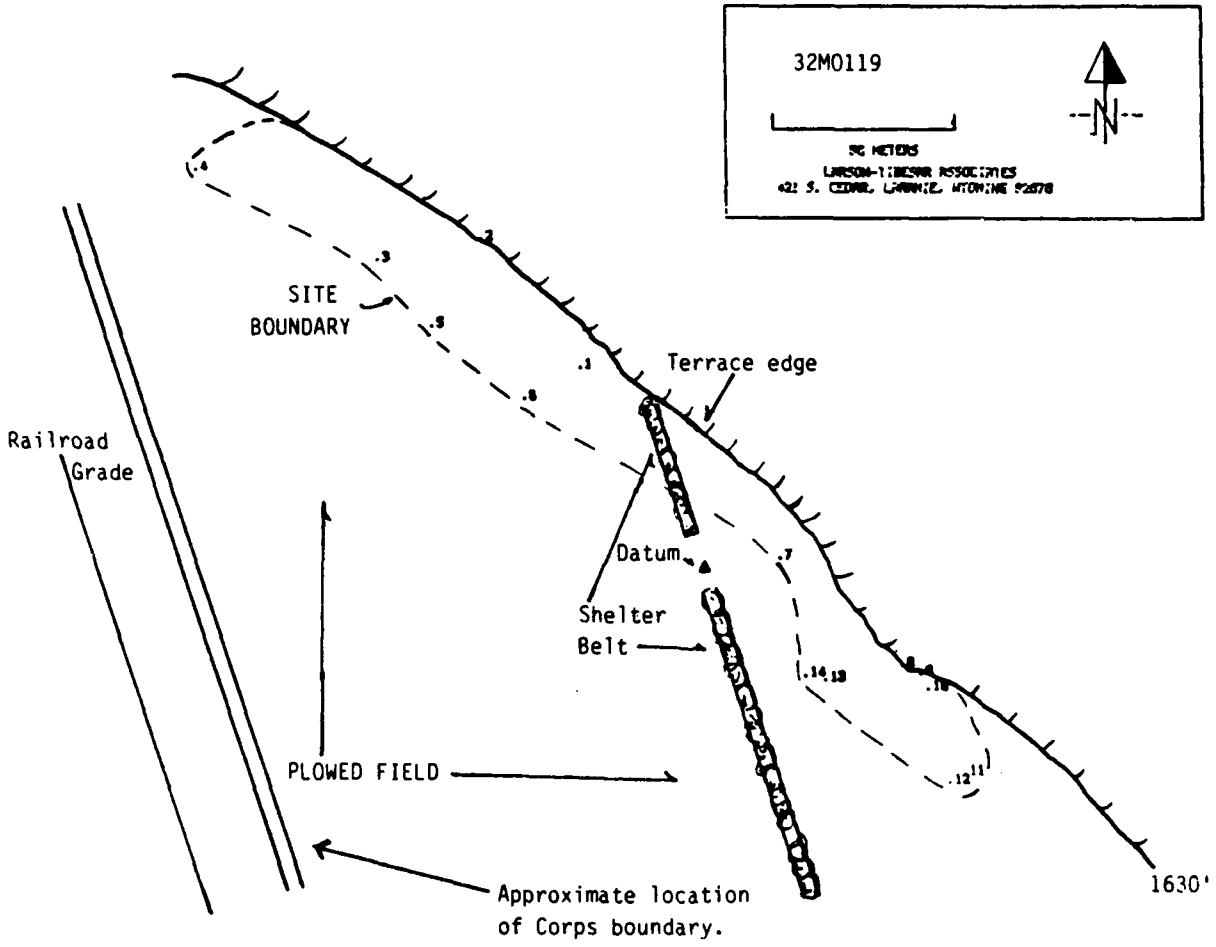

Figure 6.84. Map of 39MO119.

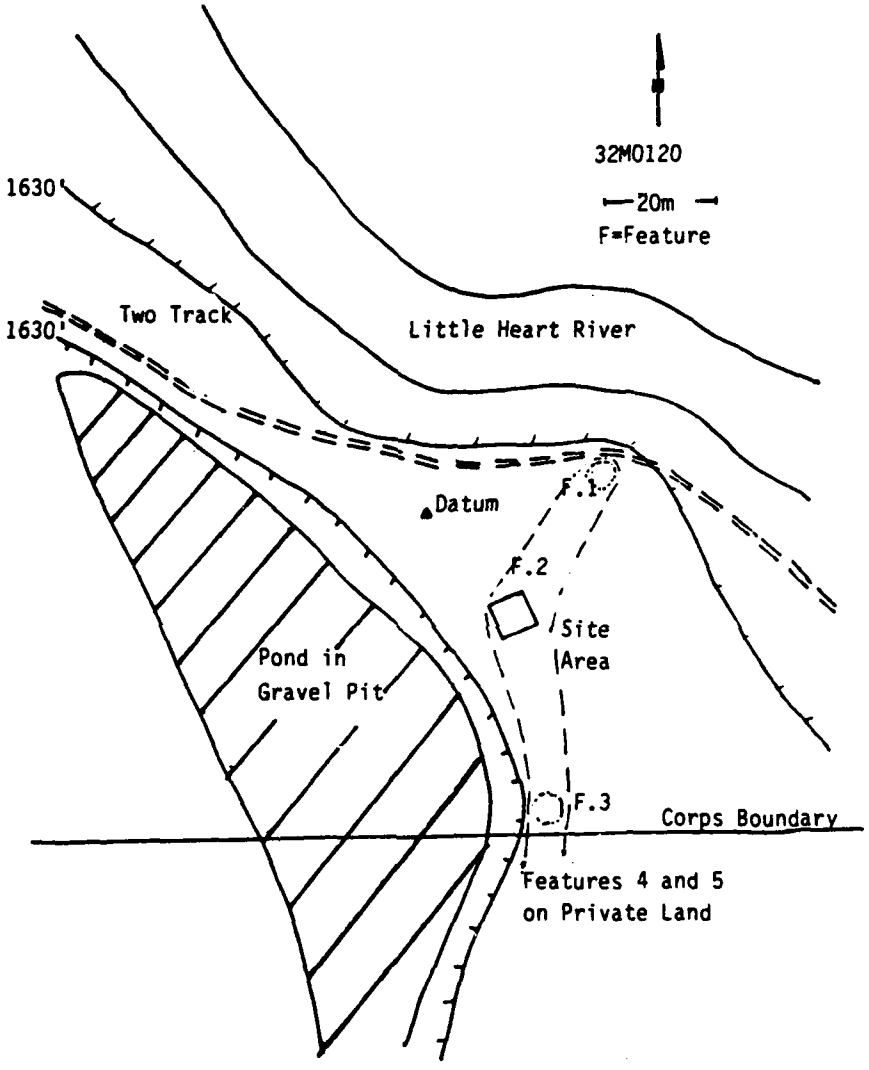

Figure 6.85. Map of 32M0120.

Joseph Schmidt came with his wife Eva to Dakota Territory in 1881 and homesteaded south of Mandan. Mr. Schmidt at one time or another worked for the Northern Pacific Railroad, a hay contractor for Fort Lincoln, and as a woodcutter. In 1900, he purchased the Riverside Ranch, which he operated until 1923. In 1909, he sold land to the Northern Pacific Railroad for a depot which they named Schmidt.

Fogarty's should be identified as to function and an effort should be made to identify its remains archeologically. It is recommended that the features at this site be tested to determine their age and function. The 1878 GLO plat reference to Fogarty's may also refer to a location outside the Corps boundary, where a log cabin was observed in 1984. Therefore, archival research is recommended in addition to testing before a determination of eligibility for nomination to the National Register of Historic Places is made.

32MO122

A depression, an apparent outhouse pit and an area of buried trash approximately one meter below the present ground surface were observed at this location (Figure 6.86). The site area is on a terrace above Lake Oahe at an elevation of 1640 feet. Site area is approximately 1200 square meters. The site is being eroded by Lake Oahe. Vegetation in the site area consists of mixed prairie grasses. Ground cover was moderate at the time the site was recorded.

Cultural material observed in the cutbank includes aquamarine glass fragments, bone, leather and metal. The extent of the buried deposit is unknown, but it is visible for at least five meters along the bank edge.

A school was shown at or near this location on the 1917 Standard Atlas of Morton County, North Dakota but the artifacts observed on site are more consistent with a homestead settlement. A habitation of "Joseph Smith, Jr." is also shown near this site.

This property was originally patented to Elizabeth Weith (1895). Subsequent owners have been: Joseph Schmidt (1896); Elizabeth Weith (1896); Josef and Eva Schmidt (1909); the Missouri River Railway Company (1909); Bonanza School District #12 (1918); Joseph Schmidt, Jr. (1920); Mary F. Schmidt (1938); the State of North Dakota (1938); E.O. Lindstrom (1940, sheriff's deed); the State of North Dakota (1956); Frank J. Lanz (1956); Frank J. and Rose Marie Lanz (1957); Morton County (1966); the State of North Dakota (1966); Leland C. & Angela M. Graner (1966); and the United States (1970).

Testing should be completed at this site to determine its age, content and extent prior to making a determination of eligibility for nomination to the National Register of Historic Places.

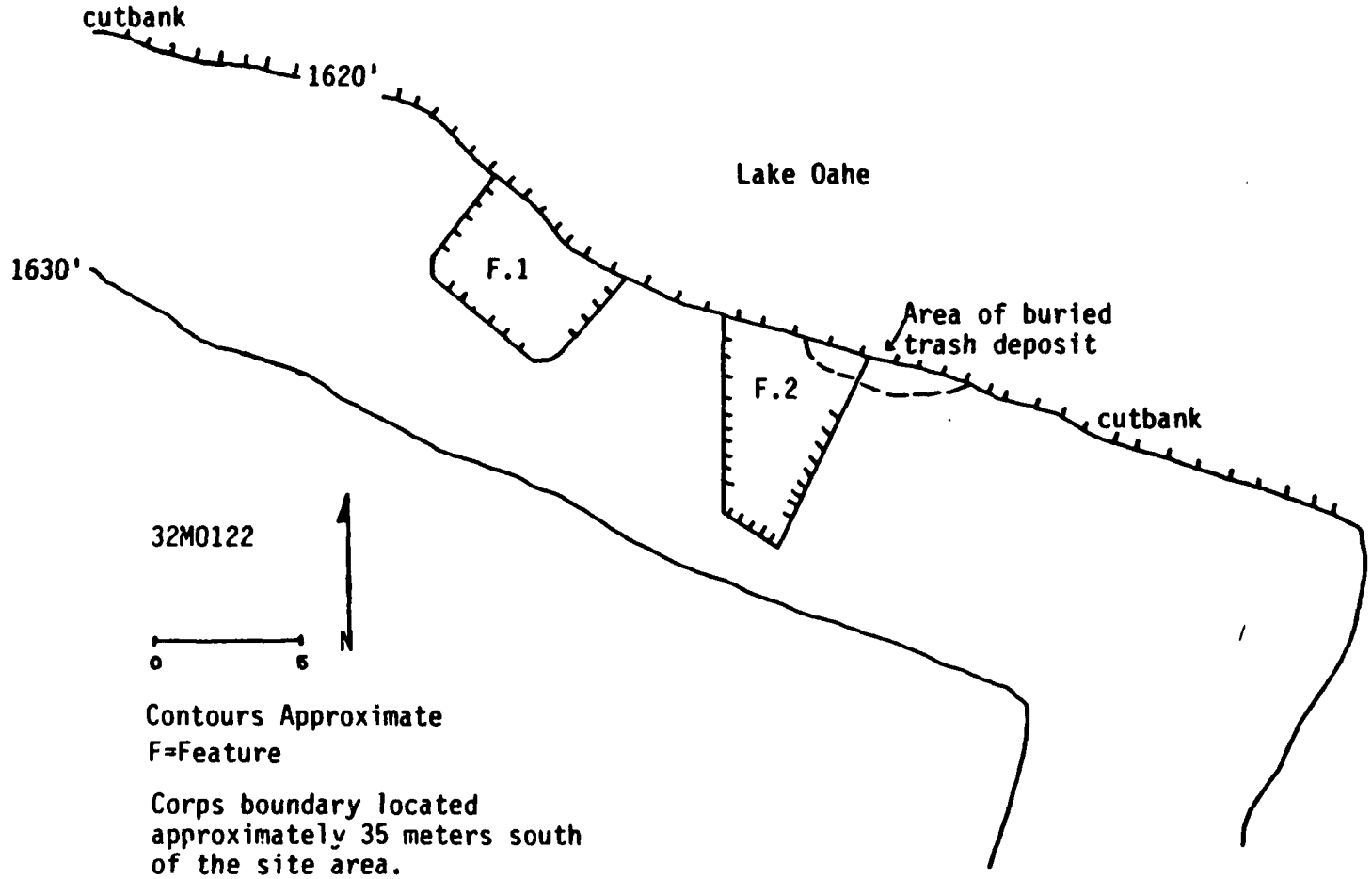

Figure 6.86. Map of 39MO122.

32MO123

A collapsed cellar in the side of the hill (Figure 6.87) and a deep depression were recorded at 32MO123 (Figure 6.88). The buildings have either collapsed or have been removed. Site area is 525 square meters. This site appears to be the remains of a farmstead or homestead, probably from the period 1880-1920.

An unnamed seasonal drainage and pond are located five meters from this site at an elevation of 1640 feet. Vegetation at the site consists of a very dense cover of mixed grasses. Visibility was extremely poor at the time the site was recorded.

A building/structure is shown on this location on the 1878 General Land Office survey plat. The property was patented to the heirs of Magdalena Platzner on June 29, 1891. Subsequent owners have been: George Platzer (1892); John Melzner (1897); Herman Ehrensperger and Wilhelm Muller (1907); Herman Ehrensperger (1907, deed from Wilhelm Muller); John Melzner (1913); Theodore Wendt (1928); the Morton County Welfare Board (1940, trust mtg.); Andrew C. Graner (1943); Leland Graner (1964); and Morton County (1970, a portion).

Integrity at this site appears to be good. There is a good potential for the presence of intact subsurface deposits. Based on the early date of the site (pre-1878) and its potential to provide significant information relevant to early Euroamerican settlement in this area, this site is believed to be eligible for nomination to the National Register of Historic Places.

LT684-3IF

This isolated find is a Tongue River silicified sediment tertiary flake, size grade 4 (i.e., greater than or equal to one inch but less than two inches in size).

LT684-13IF

This isolated find is a McCormick-Deering one-row cultivator.

LT684-50IF

This isolated find is a glass fragment, probably from a bottle or a jar.

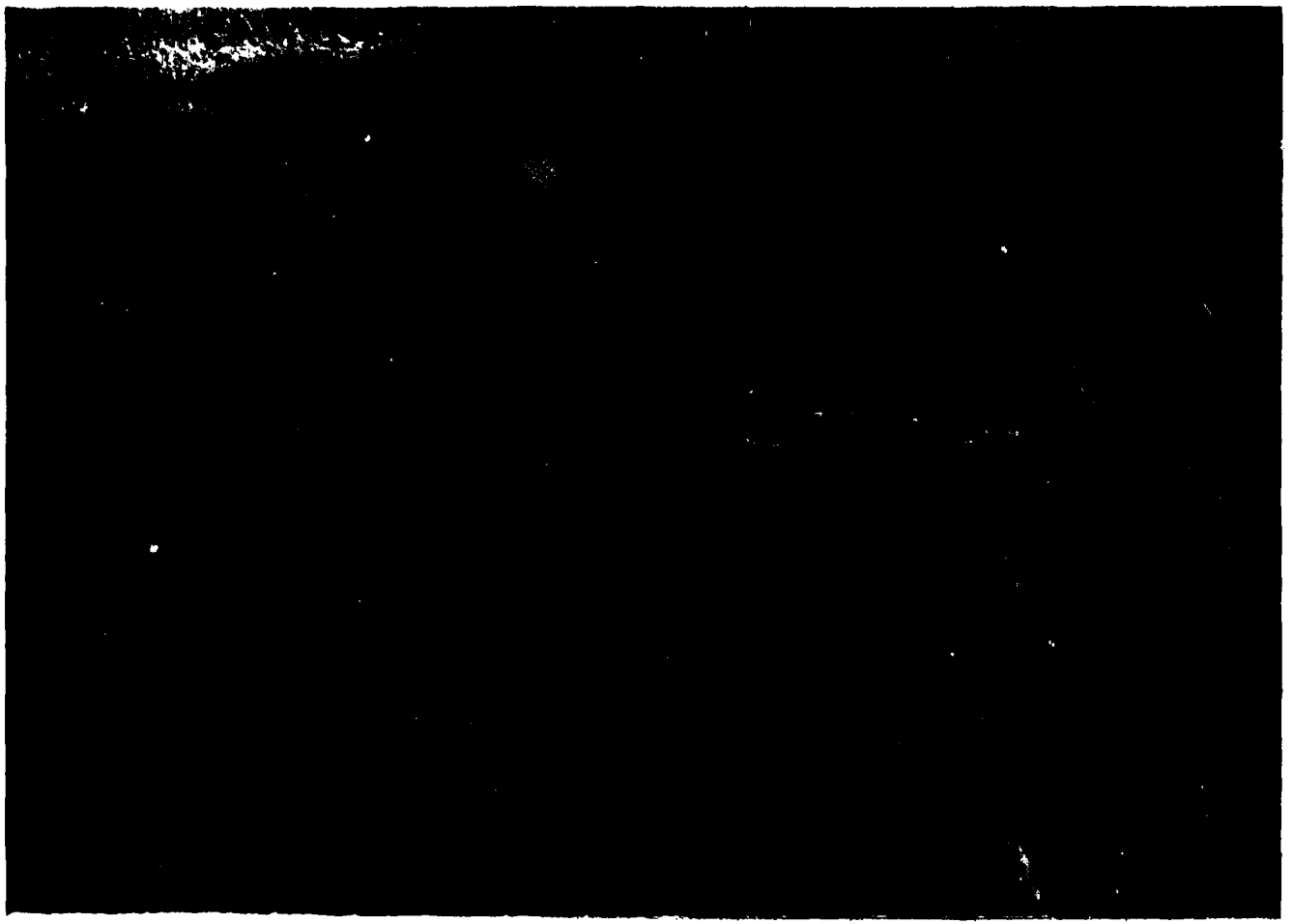

Figure 6.87. Structure at 32M0123.

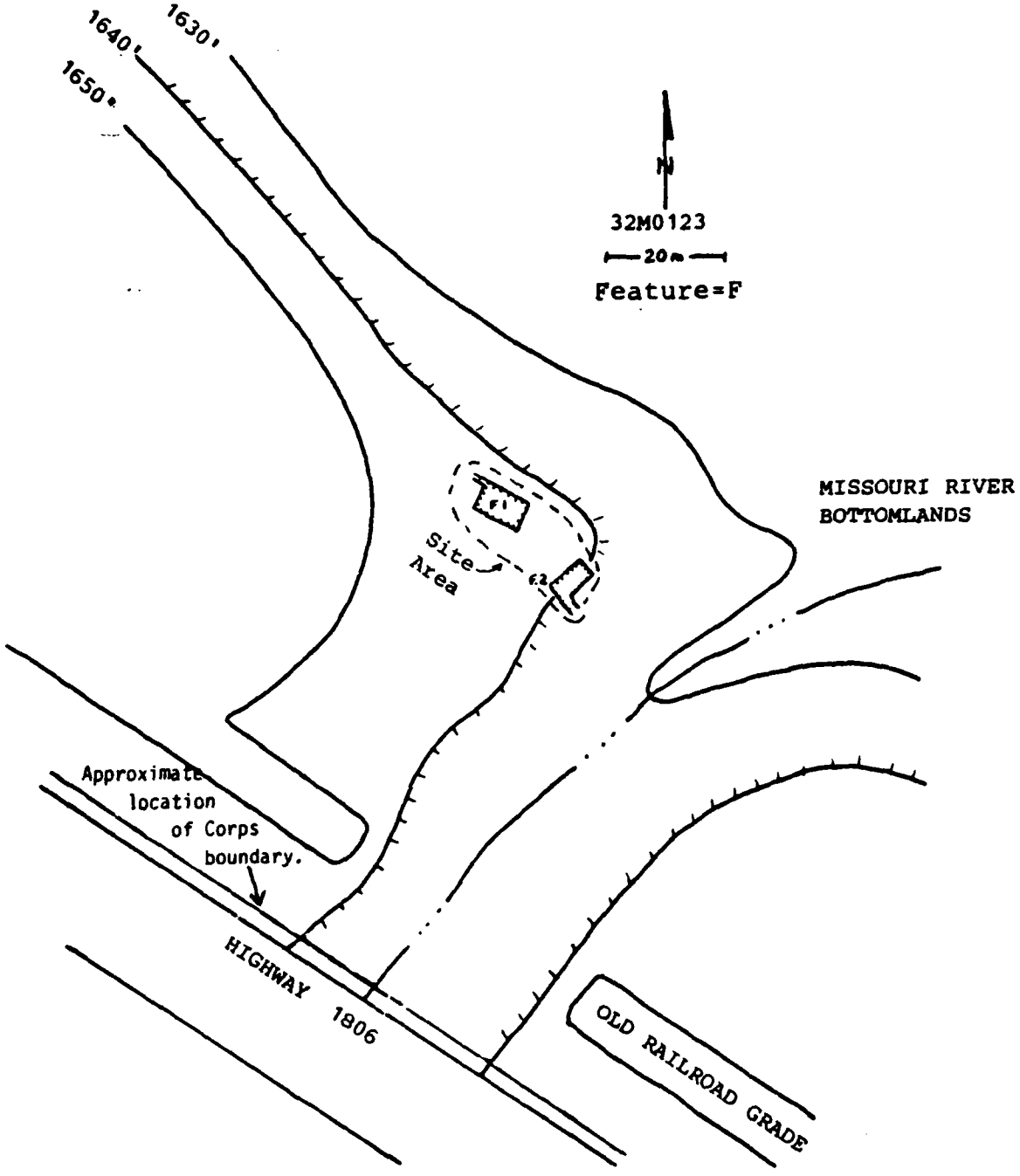

Figure 6.88. Map of 32M0123.

CHAPTER SEVEN
ANALYSIS OF SITE DISTRIBUTION PATTERNS

Thomas K. Larson

Introduction

The site analyses presented in the following sections were conducted in order to determine if prehistoric site locations along the upper reaches of Lake Oahe exhibit distinctive environmental/locational characteristics which distinguish them from other areas along the lake which do not contain cultural resources (in the following sections, the term "site" is used to refer to both site and isolated find locations). If this is the case, then it should be possible to develop models which indicate the probability of there being a cultural resource at a specified location.

The present research is an outgrowth of results obtained from analyses conducted for the 1983 inventory of the left bank of Lake Oahe (Larson et al. 1986). While the environmental variables used are much the same as the previous analyses, the modeling approach and the statistical techniques employed here are somewhat different. For the present research, all prehistoric cultural resources are treated as a single category. Additionally, results from both sides of the river and prior cultural resource studies (Larson et al. 1983; 1986) were combined with the 1984 results to yield the data set studied.

Selection of Sample Units

One hundred forty prehistoric cultural resource locations have been recorded along the North Dakota portion of Lake Oahe. These 140 locations were compared against 120 randomly selected locations at which no cultural resources have been recorded. The random points are the center of one-quarter mile long segments of upper terrace, or bluff edge, along the valley. The width of these units varies somewhat due to changing widths of federal property along the upper terrace.

Since no prehistoric cultural resources have been recorded in the bottom lands, these areas were excluded from the selection of nonsite locations. The sample was randomly selected from all possible one-quarter mile units within the area which do not contain recorded cultural resources.

Environmental Variables Used in Analysis

A set of eight environmental/locational variables were measured at each of the 260 sample locations. A tabular listing of these data is presented in Appendix E contained within Volume II of this report. The eight variables are:

1. Distance to the Missouri River
2. Distance to closest tributary
3. Distance to second closest tributary
4. Maximum slope
5. View Spread
6. Area of tree cover
7. Area of brush cover
8. Distance to timber

Distance to the Missouri River, distance to the closest tributary, and distance to the second closest tributary were all measured by hand using an engineer's scale and topographic maps. Calculated distances are expressed in feet. Although the entire survey area is relatively close to the old channel of the Missouri River, this distance does vary to a considerable degree. The distance to the Missouri River indicates a location's proximity to the most reliable water source and may also influence other characteristics of the setting such as timber availability, access to game trails, and overall environmental diversity of the location. Tributary drainages, when in close proximity to a sample point, provide added timber cover, greater vegetational diversity and increased topography to a particular setting.

Maximum slope was calculated for the random point or center of the site using topographic maps and a Reproduction Specialties, Inc. Land Area and Slope Indicator. Slope is expressed in percent grade. The surrounding slope of a location often indirectly indicates both topographic relief and the amount of flat surface available for occupation.

View spread is an arc, measured in degrees, which extends downhill from the elevational contour line which passes through the location. Previous archeological studies (e.g., Sanders et al. 1982; Kvamme 1983) have indicated that the amount of view may have been a primary concern in the selection of prehistoric site locations. For purposes of the present study, size of the arc was determined by the maximum view extending out at least one-half mile (.80 km). View spread was calculated using a 360 degree protractor and topographic maps.

Area of timber and area of brush were both calculated using a digital planimeter and 1947 Corps of Engineers maps for the Missouri River. The Corps maps show the locations of bottom land timber and brush prior to inundation. It has been suggested (e.g., Griffin 1977) that the amount of timber in an area may influence the location (and eventual movement) of Plains Village habitation sites along the river. The amount of timber and brush within a two mile (3.22 km) radius of a location was computed. These calculations were entered as square inches of map area. Since the maps

used are at a scale of 1:24,000, one square inch of map area equates to 91.83 acres, or 37.07 hectares. Distance to timber was also calculated using the same maps and an engineer's scale. These measurements were recorded in feet.

Logistic Regression

The multivariate statistical technique stepwise logistic regression (Engelman 1981) was performed on the eight environmental variables discussed above in order to evaluate their classificatory power. The use of the logistic regression technique in predictive site modeling is discussed by Kvamme:

> This procedure is logistic regression (Wrigley 1976) and it has been shown, both theoretically and empirically, to offer improved classificatory performance over discriminant analysis in non-normal situations (Press and Wilson 1979; Maynard and Strahler 1981). For example, Press and Wilson (1979) found a mean improvement of 12% and Maynard and Strahler (1981) showed a 39% increase in classification accuracy over corresponding discriminant analyses of sample data. Maynard and Strahler (1981) argue that logistic regression is the optimal statistical pattern classifier for most situations (those lacking multivariate normality); the cost is increased computation effort. Like discriminant analysis, logistic regression defines a linear decision boundary that optimally separates the groups when group variance structures are assumed to be equal.
>
> The logistically devised posterior probability that location $\underline{i}$ belong to group 1 (the site group) is repeated here in matrix form...
>
> $$P = \frac{e^{a+\underline{X}}}{1 + e^{a+B\underline{X}}} = \frac{1}{1 + e^{-(a+B\underline{X})}}$$
>
> where $\underline{X}$ is a vector containing measurements of the environmental predictor variables at location $\underline{i}$, B is a vector of weights, and a is an intercept term (Wrigley 1976:10) [Kvamme 1983:72-73].

The BMDP program Stepwise Logistic Regression (Engelman 1981) was performed using the eight environmental variables at the 140 site locations and 120 randomly selected nonsite locations. Since logistic regression can also use classificatory variables, the side of the river at which a location was found was included as a ninth variable. The areas on the left bank were assigned the value "2" and those on the right bank were given the value "3."

The stepwise procedure indicated that the side of river variable and four of the environmental variables - distance to second closest tributary, view spread, area of tree cover, and distance to timber - contributed to a model which differentiates between site and nonsite locations. The logistic regression coefficients for these five variables and a presentation of the overall accuracy of the model are presented in Table 7.1.

Table 7.1. Logistic coefficients and overall classification accuracy of the five variables used in the test of sites versus nonsite locations.

intercept or constant (a) = -.148

Variable Name	Coefficient (B)
Side of river	0.442
Distance to second closest tributary	-0.000166
View spread	0.0121
Area of tree cover	-0.0532
Distance to timber	-0.000558

	PREDICTED		ACTUAL
	SITES	NONSITES	
SITES	112 (80.00%)	28 (20.00%)	140
NONSITES	38 (31.67%)	82 (68.33%)	120

Overall accuracy of the model = 74.62%

The results indicate that the overall accuracy of the model is 74.62 percent. As explained by Kvamme (1983:76), the classification model uses a linear decision boundary to assign locations to the site of the nonsite category. The boundary used here between site and nonsite locations is .5, or equivalency. In other words, locations which fall on one side of this boundary are classed as sites while those which fall on the other side are classified as nonsites. "Cutpoints" other than .5 could have been used to correctly predict either more site locations or more nonsite locations. As the graph in Figure 7.1 demonstrates, however, the use of cutpoints other than .5 guarantees that more cases will also be incorrectly classified. Use of a cutpoint of .90, for instance, would correctly classify 100 percent of the sites, but it would also incorrectly classify 100 percent of the nonsite locations (see Figure 7.1).

Using the equation presented in the above Kvamme quote, the coefficients in Table 7.1, and the values for the five variables as they are given in Appendix E, one can calculate the probability of a prehistoric cultural resource being present at any one of the 260 locations. Using the same five variables, the model could also be used to predict the presence or absence of prehistoric cultural resources at any location along the upper portions of Lake Oahe. As the summary of accuracy figures in Table 7.1 demonstrates, the model is somewhat "conservative" in that it will more often incorrectly predict a site at a nonsite location than it will do the reverse. From a management standpoint, the mathematical model could be used to predict where unrecorded sites may be exposed through erosion, low water, or increased surface visibility. Such models can easily be projected graphically and may be of benefit to long term monitoring efforts along Lake Oahe.

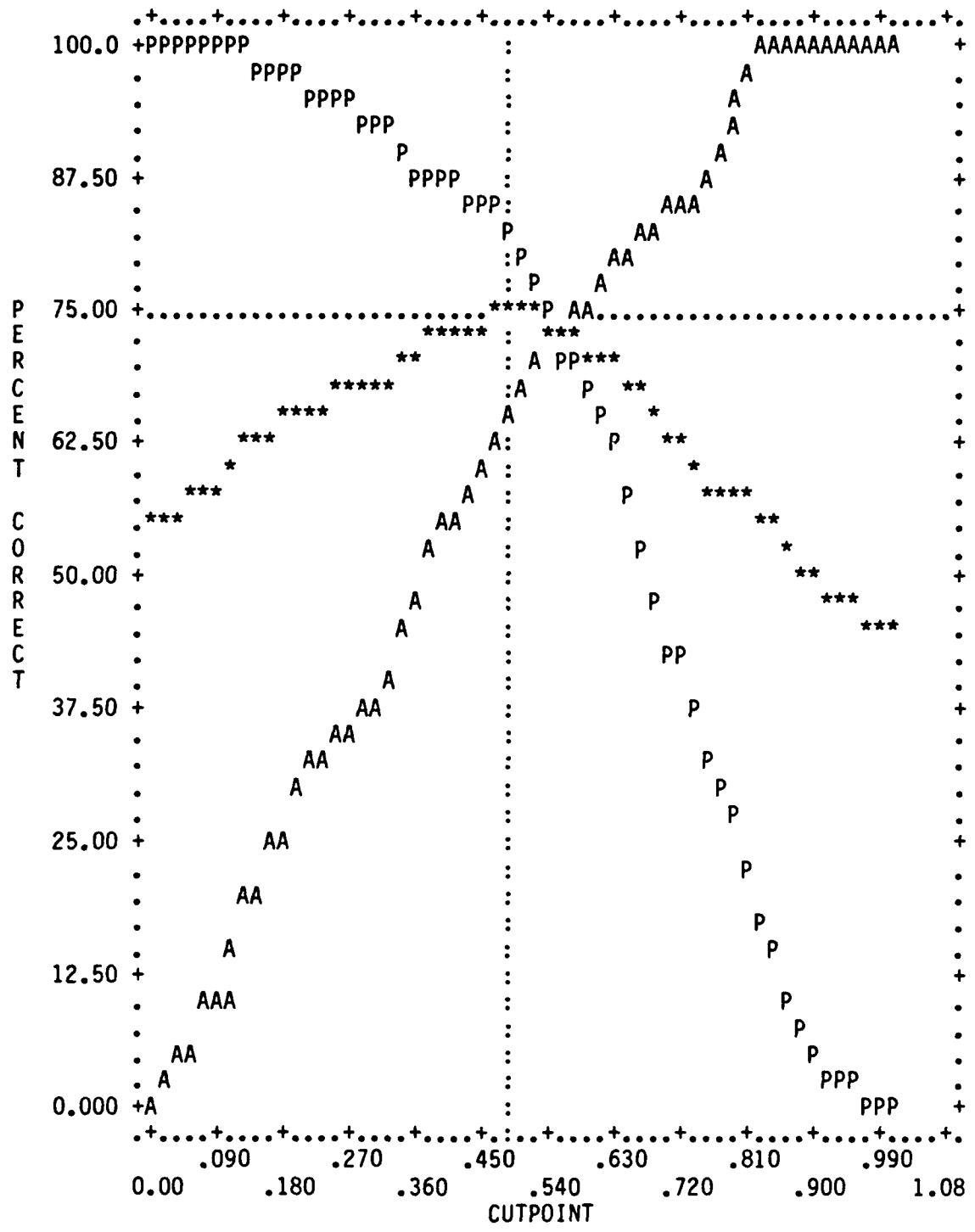

Figure 7.1. Graph illustrating the predictive power of the logistic regression model for cultural resource locations. P = the results for site locations. A = the results for nonsite locations. The '*' indicates the combined results for both sites and nonsites. As the dotted lines indicate, at the 50 percent cutpoint, the combined results are approximately 75 percent accurate. Output for the graph is from the BMDP program for stepwise logistic regression (Engelman 1981).

CHAPTER EIGHT
SUMMARY AND CONCLUSIONS

Dori M. Penny

Inventory Results

The 1984 Lake Oahe inventory resulted in the investigation of 57 sites and 20 isolated finds representing a wide range of functions and temporal associations. The inventory efforts resulted in the location of 10 previously recorded sites, 14 new prehistoric sites, 27 new historic sites, and 6 new sites containing both a prehistoric and an historic component.

The 1984 inventory included 13,200 acres (5280 hectares) of federal land. A 100 percent inventory was completed of 6100 acres. A 25 percent sample of the remaining 7100 acres was inventoried (see Chapter One). The 7100 acres from which the sample was selected are in bottom lands.

All but two of the 79 cultural resource properties were recorded in the 100 percent inventory which took place outside of the bottom lands. Using the figures derived from these areas, cultural resource density equals to 8.08 localities per section (640 acres) of land.

As noted in Larson et al. (1986:120) and supported by data from the 1984 inventory, site density in the bottom lands appears to be very low. Those materials which are recorded in the bottoms have, to date, been exclusively historic in origin.

Types of Cultural Components Represented

Table 8.1 is a listing of the cultural components recognized at the 57 sites recorded during the 1984 inventory. A total of 73 components were recognized at the 57 sites. Components with temporal diagnostics present indicate occupations from the Late Plains Archaic, Late Prehistoric and Protohistoric periods, as well as historic occupations from the 1860s to 1950s. Three temporally diagnostic isolated finds were recorded. All three of these (LT684-47, LT684-117 and LT684-13) date to the historic period.

Analytical Results

The site patterning analysis presented in Chapter Seven has demonstrated that location of prehistoric cultural resources is predictable to a fairly high degree (approximately 75 percent). It is suggested that the mathematical model for the location of these resources could be used to predict where prehistoric cultural materials may become exposed due to low water, erosion or increased ground visibility.

Table 8.1. Cultural components recognized within the sites recorded.

	HISTORIC COMMUNITY	HISTORIC FARMSTEAD/ ALLOTMENT	HISTORIC MISSION	HISTORIC TRASH	OTHER HISTORIC	PLAINS VILLAGE	MIDDLE WOODLAND/ LATE ARCHAIC	OTHER PREHISTORIC
32MO1					X			
32MO16					X			
32MO19					X			
32MO20						X		
32MO114			X					
32MO115							X	
32MO116							X	
32MO117							X	
32MO118		X						
32MO119					X			
32MO120		X						
32MO121		X						
32MO122		X						
32MO123		X						
32MO124	X							
32MO125							X	
32MO126		X		X				
32MO127		X						
32MO128							X	
32MO129							X	
32MO130							X	
32MO131		X						
32MO132		X						
32MO133							X	
32SI1						X		
32SI3					X			
32SI5	X		X		X	X		
32SI13		X			X			
32SI16				X			X	
32SI30		X		X			X	
32SI31							X	
32SI32		X						
32SI33		X	X					
32SI34							X	
32SI35		X						
32SI36		X						
32SI37		X					X	
32SI38		X						
32SI39		X						
32SI40		X	X				X	
32SI41		X						
32SI42				X				
32SI43		X						
32SI44		X						

Table 8.1 (cont.). Cultural components recognized within the sites recorded.

	HISTORIC COMMUNITY	HISTORIC FARMSTEAD/ ALLOTMENT	HISTORIC MISSION	HISTORIC TRASH	OTHER HISTORIC	PLAINS VILLAGE	MIDDLE WOODLAND/ LATE ARCHAIC	OTHER PREHISTORIC
32SI45	X							
32SI46	X							
32SI47								X
32SI48	X							
32SI49								X
32SI50					X			X
32SI51								X
32SI52	X							
32SI53					X			X
32SI54	X							
32SI55	X							
32SI56	X	X						X
32SI101						X		
	2	29	2	3	6	8	3	20

Total number of components = 73

An additional five research questions were posed as part of this project which relate to cultural and temporal affiliations. These questions and the pertinent data derived from this inventory are presented below.

1) On both sides of the river, there appear to be two distinct clusters of Woodland sites, one between Huff and Fort Rice and another from Fort Yates south to the state line. Can these patterns be substantiated and, if so, what are their implications in terms of cultural adaptation to the area?

Based on typology, a Woodland component appears to be present at 32SI5. While 32SI5 is a previously recorded site, this is the first time a Woodland component has been identified. A large mound was recorded at 32MO117. This mound may represent a Woodland occupation.

Both of these sites are located between the clusters described above. While a sample size of two is much to small to indicate a trend, the 1984 inventory results fail to substantiate a clustering of Woodland sites limited to the two described areas.

2) There is an obvious concentration of village sites (Extended Middle Missouri, Terminal Middle Missouri and Post-Contact Coalescent) in the northern portion of the Cannonball region and adjoining southern portion of the Knife-Heart region. Can the environmental factors influencing this settlement pattern be quantified?

No further information was gathered on this research topic which would alter the conclusions drawn from the 1983 inventory of the left bank of Lake Oahe. The modeling efforts carried out continue to indicate that availability of timber may have been a key element influencing the settlement patterns of Plains Village occupation sites.

3) The literature search indicates the historic Arikara used the study area as part of their hunting area. Can such camps be found and identified?

No cultural resources were identified which are attributable to historic Arikara use of the area.

4) In addition to Arikara hunting camps, can other "extra-village activity areas" (e.g., Steinacker 1981:93) be located and, if so, which traditions and variants will they be related to?

Only two extra-village activity sites, 32MO119 and 32SI53, were identified as a result of the 1984 inventory. Site 32MO119 was not assignable to tribal affiliation.

Site 32SI53 may be related to the utilization of the area by the Sioux (see Chapter Six). However, further work at 32SI53 is necessary prior to assigning an affiliation.

It is possible that a number of the sites assigned to the designation "unidentified prehistoric" may relate to the Plains Village extra-village

activities. The two extra-village sites described above may therefore comprise an arbitrarily small category.

5) Do site attributes such as site size and ceramic assemblages bear out the usual interpretation that, in the upper Cannonball region, most village sites which are small and unfortified are from the Extended Middle Missouri variant, while all sites from the Terminal Middle Missouri variant are large and fortified (e.g., Thiessen 1976; Sperry 1982)?

Insufficient data were derived from the 1984 inventory to substantiate this interpretation. However, the re-examination of 32SI101 would seem to indicate that this site is a large unfortified Extended Middle Missouri occupation, a pattern which would conflict with the usual interpretation. At this point, the dating of 32SI101 is based on typology and site patterning. Therefore, its apparent conflict with the usual interpretation can not be conclusively demonstrated without a series of radiocarbon dates.

Management Recommendations

Of the 79 cultural resource properties recorded during the 1984 survey, eight are believed to be eligible for nomination to the National Register of Historic Places. Of the remaining 71, it is believed that further work is needed to determine the eligibility of 31. Table 8.2 summarizes the type of work believed necessary to assess the 31 sites for which eligibility could not be determined. The 18 remaining sites and 22 isolated finds are considered not eligible for nomination to the National Register of Historic Places.

As stated, it is believed that sufficient data are available to state that eight of the sites recorded during the 1984 inventory are eligible for nomination to the National Register of Historic Places. Four of these sites are prehistoric (32MO1, 32MO20, 32SI3 and 32SI101). The remaining four are historic (32MO123, 32MO126, 32MO127 and 32SI42). Pertinent information about the eligibility of these sites is summarized in Table 8.2.

Impacts to Sites

Twenty-nine of the 57 sites recorded during the 1984 inventory are known to be experiencing some type of adverse impact. These adverse effects include frequent inundation, wave action, cutbank erosion, slope wash, road cutting, prairie dog colonization, agricultural activities, gravel operations, construction, cattle trampling and natural erosion. Table 8.3 summarizes these impacts by site.

The most frequent and the most damaging impacts are those associated with Lake Oahe (frequent inundation, wave action and cutbank erosion). Larson et al. (1986:128-132) demonstrated the magnitude of such damage for the Havens site (32EM1) which is located on the left bank of the river within the 1983 inventory area. At Havens, it is estimated "that the shoreline is collapsing laterally at an average rate of 7.5 meters per year" (Larson et al. 1986:128). While no such mathematically

Table 8.2. Summary of sites believed to be eligible or potentially eligible for nomination to the National Register of Historic Places.

Smithsonian Number	Status	Summary
32MO1	Eligible	Believed to be eligible based on its potential to contribute to knowledge the of village patterning, subsistence and technological systems during the Terminal Middle Missouri.
32MO20	Eligible	Believed to be eligible based on the site's potential to contribute greatly to the understanding of Woodland complexes in the Middle Missouri subarea.
32MO115	Potentially Eligible	Test excavations of the lithic concentrations should be conducted in order to determine the integrity of the site and its potential for additional buried cultural deposits.
32MO116	Potentially Eligible	Testing is recommended to determine if intact subsurface deposits exist beneath the plow zone and to assess their extent.
32MO117	Potentially Eligible	Testing is recommended to determine the exact nature of the mound feature and to evaluate the age, extent and function of the buried cultural level.
32MO119	Potentially Eligible	Limited testing should be conducted in order to determine integrity.
32MO120	Potentially Eligible	Testing is recommended to evaluate the age, function and integrity of this site. Additional archival research may also be necessary to establish age and function of this site.
32MO122	Potentially Eligible	Testing should be done to determine the age, content and extent of this site.

Table 8.2. (cont.) Summary of sites believed to be eligible or potentially eligible for nomination to the National Register of Historic Places.

Smithsonian Number	Status	Summary
32MO123	Eligible	This site has the potential to provide significant information about changing Euroamerican settlement and subsistence patterns during the period 1875-1890.
32MO124	Potentially Eligible	Testing is recommended to determine age and function.
32MO125	Potentially Eligible	Testing is recommended to substantiate site function and integrity.
32MO126	Eligible	The site has the potential to provide significant information about changing Euroamerican settlement and subsistence patterns during the period 1875-1890.
32MO127	Eligible	This site has the potential to provide significant information about changing Euroamerican settlement and subsistence patterns during the period 1875-1890.
32MO128	Potentially Eligible	Testing is recommended to determine age, function and integrity.
32SI3	Eligible	This site is believed to be eligible based on its potential for yielding significant information related to the study of the Extended Middle Missouri.
32SI5	Potentially Eligible	The presence or absence of intact subsurface prehistoric deposits should be investigated in conjunction with testing related to the historic component. Excavation and analysis of subsurface historic deposits is recommended.

Table 8.2. (cont.) Summary of sites believed to be eligible or potentially eligible for nomination to the National Register of Historic Places.

Smithsonian Number	Status	Summary
32SI13	Potentially Eligible	Testing is recommended to determine if there are intact prehistoric deposits present in areas of the site other than the beach. It is expected that this will entail testing at least one meter below the present ground surface because of extensive deposition.
32SI16	Potentially Eligible	Detailed testing of a number of areas within the site is recommended in order to determine the nature of both the prehistoric and historic components.
32SI30	Potentially Eligible	Extensive testing and archival research is recommended to determine the age and function of this site.
32SI35	Potentially Eligible	This site should be evaluated after the development of a context for the study of nineteenth and early twentieth century reservation sites.
32SI36	Potentially Eligible	This site should be evaluated after development of context for the study of nineteenth and twentieth century reservation sites.
32SI37	Potentially Eligible	Further archival research and informant interviews should be conducted to establish the association of the family of Two Bears and Josephine Gates Kelly to this site. Testing should also be completed in order to establish the age and integrity of 32SI37.
32SI38	Potentially Eligible	Testing and archival research should be completed in order to determine the age, extent and function of this site.

Table 8.2. (cont.) Summary of sites believed to be eligible or potentially eligible for nomination to the National Register of Historic Places.

Smithsonian Number	Status	Summary
32SI40	Potentially Eligible	Further archival research and informant interviews are recommended to determine the connection of this site with the Slab Town community (32SI5).
32SI42	Eligible	This site has both historic and architectural significance. It has the potential to provide an understanding of reservation and federal politics during the depression period.
32SI43	Potentially Eligible	This site should be evaluated after the development of a context for the study of early twentieth century reservation sites.
32SI44	Potentially Eligible	This site should be tested to determine the nature of subsurface remains.
32SI45	Potentially Eligible	Further archival research and informant interviews are recommended to determine the connection of William Halsey to this site. Halsey's importance relative to a nineteenth and twentieth century reservation context should also be investigated.
32SI47	Potentially Eligible	Testing is recommended to determine the integrity and function of this site.
32SI48	Potentially Eligible	This site should be evaluated after the development of a context for the study of early twentieth century reservation sites.
32SI50	Potentially Eligible	Testing is recommended to determine the age, integrity and function of this site.
32SI51	Potentially Eligible	Testing is recommended to determine the site's age and integrity.

Table 8.2. (cont.) Summary of sites believed to be eligible or potentially eligible for nomination to the National Register of Historic Places.

Smithsonian Number	Status	Summary
32SI52	Potentially Eligible	This site should be evaluated after the development of a context for the study of nineteenth and twentieth century reservation sites.
32SI53	Potentially Eligible	Testing is recommended to better determine the extent and physical integrity of this site. It should be determined through testing whether or not the lithics and historic items are the result of one event or a series of events.
32SI54	Potentially Eligible	This site should be evaluated after the development of a context for the study of early twentieth century reservation sites.
32SI55	Potentially Eligible	Testing and archival research are needed to identify the content, age and extent of this site.
32SI56	Potentially Eligible	Test excavations are recommended in order to determine the presence or absence of buried prehistoric cultural material. Archival research should be conducted in order to determine the site's association with Slab Town (32SI5). Additionally, the site should be evaluated after development of a context for the study of early twentieth century reservation sites.
32SI101	Eligible	This site is believed to be eligible based on its potential to significantly add to our understanding of the prehistory of the Middle Missouri subarea, Extended Middle Missouri variant and, possibly, protohistoric Cheyenne occupation of the area.

Table 8.3. Impacts to sites.

Site Number	Impacts
32SI1	Inundation, wave action and prairie dog colonization
32SI3	Cutbank erosion
32SI44	Wave action
32SI52	Cutbank erosion
32SI101	Cutbank erosion
32SI137	Cutbank erosion and partial inundation
32SI5	Inundation and wave action
32SI36	Frequent inundation of a portion of the site
32SI40	Cutbank erosion
32SI51	Cutbank erosion
32SI35	Cutbank erosion
32SI13	Cutbank erosion
32SI31	Slope wash, erosion during periods of high lake level and road cutting
32SI42	Natural erosion
32SI49	Natural erosion
32M0130	Natural erosion
32M0128	Natural erosion
32M0121	Partial inundation
32M0126	Erosion during periods of high lake level
32M0127	Erosion and periodic inundation of portions of this site
32M0132	Periodic inundation
32M016	Agriculture and road cutting
32M0129	Agriculture
32M019	Cultivation, gravel operations and minimal cutbank erosion
32M0114	Natural erosion and cattle trampling
32M0115	Agriculture
32M0116	Agriculture
32M0119	Agriculture and possibly railroad construction.
32M0122	Cutbank erosion

demonstratable example exists for the 1984 project area, it is apparent that a number of sites have lost substantial area to lake processes. Examples of such sites are 32SI1, 32SI5 and 32SI101 (see Chapter Six for more complete information).

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